

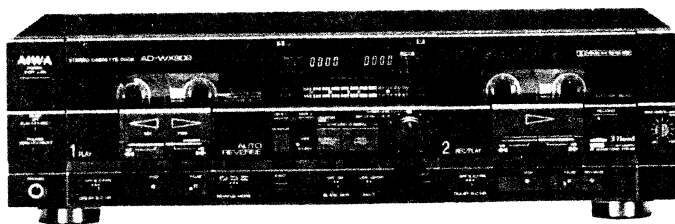
# SERVICE MANUAL

MODEL NO. AD-WX909

■STEREO CASSETTE DECK

■TYPE. HB, UB, EB, KB, ZB

■BASIC MECHANISM: X-3 (1DECK)  
DM-28 (2DECK)



## SPECIFICATIONS

|                              |                                                                                                                                                                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>                  | Stereo cassette tape deck                                                                                                                                           |
| <b>Track format</b>          | 4 tracks, 2 channels                                                                                                                                                |
| <b>Power supply</b>          | AD-WX909E, Z<br>AC 220 V, 50/60 Hz<br>AD-WX909K<br>AC 240 V, 50/60 Hz<br>AD-WX909U,<br>AC 120 V, 60 Hz<br>AD-WX909H<br>AC 120 V/220 V/240 V<br>switchable, 50/60 Hz |
| <b>Power consumption</b>     | 35 W                                                                                                                                                                |
| <b>Frequency response</b>    | METAL tape: 10 – 20,000 Hz<br>CrO <sub>2</sub> tape: 10 – 19,000 Hz<br>NORMAL tape: 10 – 17,000 Hz                                                                  |
| <b>Signal-to-noise ratio</b> | 75 dB (METAL tape DOLBY C NR ON)                                                                                                                                    |
| <b>Wow and flutter</b>       | Deck ①<br>0.1% (According to DIN 45500)<br>0.055% (WRMS)<br>Deck ②<br>0.09% (According to DIN 45500)<br>0.028% (WRMS)                                               |

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| <b>Tape speed</b>       | 4.8 cm/sec. (1-7/8 ips), 9.5 cm/sec (Double speed)                                  |
| <b>Recording system</b> | AC bias (frequency 100 kHz)                                                         |
| <b>Erase system</b>     | AC erase                                                                            |
| <b>Motor</b>            | DC Servomotor × 2<br>DC Motor × 1                                                   |
| <b>Heads</b>            | Record head: × 1<br>Playback head: × 2<br>Erase head: × 1                           |
| <b>Inputs</b>           | LINE IN/CD maximum input sensitivity: 50 mV (over 50 kΩ)                            |
| <b>Outputs</b>          | LINE OUT standard output level: 380 mV (0 VU); suitable load impedance: over 50 kΩ. |
| <b>Dimensions</b>       | 430(W) × 126(H) × 316.5(D)mm                                                        |
| <b>Weight</b>           | 6.2 kg                                                                              |

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the  symbol are trademarks of Dolby Laboratories Licensing Corporation.
- HX professional originated by BANG&OLUFSEN.

See the FX-D1 service manual for the IC pin Description and IC block diagram.

## ELECTRICAL MAIN PARTS LIST

※ Please order the all parts for this model to Japan.

| Ref. No.           | Part No.             | Description | Ref. No.                             | Part No.     | Description           |
|--------------------|----------------------|-------------|--------------------------------------|--------------|-----------------------|
| --- IC ---         |                      |             | --- MAIN-1 CIRCUIT BOARD SECTION --- |              |                       |
| 87-020-180         | IC,BA6146            |             | PCB-A                                | *            | MAIN-1 CIRCUIT BOARD  |
| 87-020-454         | IC,DM6851            |             | C1                                   | ★ 87-018-119 | CAP,CERA-SOL SS 100P  |
| 82-202-621         | IC,HD38702A39        |             | C2                                   | ★ 87-018-119 | CAP,CERA-SOL SS 100P  |
| 87-020-140         | IC,L78M12            |             | C3                                   | ★ 87-018-116 | CAP,CERA-SOL SS 56P   |
| 87-020-261         | IC,LA6358S           |             | C4                                   | ★ 87-018-116 | CAP,CERA-SOL SS 56P   |
| 82-200-616         | IC,LC6520H-3279      |             | C11                                  | ★ 87-010-135 | CAP,ELECT BP 10-25    |
| 87-020-096         | IC,M4066BP           |             | C12                                  | ★ 87-010-135 | CAP,ELECT BP 10-25    |
| 87-020-533         | IC,M4069UBP          |             | C13                                  | ★ 87-018-127 | CAP,CERA-SOL SS 470P  |
| 87-020-679         | IC,M4572BP           |             | C14                                  | ★ 87-018-127 | CAP,CERA-SOL SS 470P  |
| 87-027-895         | IC,M5218L            |             | C15                                  | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| 87-027-909         | IC,M54523P           |             | C16                                  | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| 87-020-680         | IC,NJM2068S          |             | C31                                  | ★ 87-018-119 | CAP,CERA-SOL SS 100P  |
| 87-020-758         | IC,NJM2068SD         |             | C32                                  | ★ 87-018-119 | CAP,CERA-SOL SS 100P  |
| 87-020-908         | IC,NJU4066BD         |             | C37                                  | ★ 87-010-135 | CAP,ELECT BP 10-25    |
| 87-020-898         | IC,M74HC42P          |             | C38                                  | ★ 87-010-135 | CAP,ELECT BP 10-25    |
| 87-027-937         | IC,TC4030BP          |             | C39                                  | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| --- TRANSISTOR --- |                      |             | C40                                  | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| 87-026-214         | TRANSISTOR,DTA114Y   |             | C41                                  | ★ 87-018-127 | CAP,CERA-SOL SS 470P  |
| 89-109-521         | TRANSISTOR,2SA952K   |             | C42                                  | ★ 87-018-127 | CAP,CERA-SOL SS 470P  |
| 89-110-155         | TRANSISTOR,2SA1015GR |             | C101                                 | ★ 87-015-951 | CAP,ELECT 1-50        |
| 89-318-155         | TRANSISTOR,2SC1815GR |             | C102                                 | ★ 87-015-951 | CAP,ELECT 1-50        |
| 89-320-011         | TRANSISTOR,2SC2001K  |             | C103                                 | ★ 87-018-119 | CAP,CERA-SOL SS 100P  |
| 89-321-204         | TRANSISTOR,2SC-2120Y |             | C104                                 | ★ 87-018-119 | CAP,CERA-SOL SS 100P  |
| 89-322-406         | TRANSISTOR,2SC2240BL |             | C105                                 | ★ 87-010-379 | CAP,ELECT 22-16       |
| 89-411-110         | TRANSISTOR,2SD1111   |             | C106                                 | ★ 87-010-379 | CAP,ELECT 22-16       |
| 89-412-753         | TRANSISTOR,2SD1275   |             | C107                                 | ★ 87-018-130 | CAP,CERA-SOL 820P     |
| 89-412-763         | TRANSISTOR,2SD1276P  |             | C108                                 | ★ 87-018-130 | CAP,CERA-SOL 820P     |
| 89-413-023         | TRANSISTOR,2SD1302S  |             | C109                                 | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
|                    |                      |             | C110                                 | ★ 87-018-131 | CAP,CERA-SOL SS1000P  |
|                    |                      |             | C151                                 | ★ 87-010-379 | CAP,ELECT 22-16SME    |
|                    |                      |             | C161                                 | ★ 87-010-379 | CAP,ELECT 22-16SME    |

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| Ref. No. | Part No.     | Description                      | Ref. No.                             | Part No.     | Description            |
|----------|--------------|----------------------------------|--------------------------------------|--------------|------------------------|
| C162     | ★ 87-010-404 | CAP,ELECT 4,7-50SME              | L402                                 | ★ 87-003-051 | COIL 470UH             |
| C163     | ★ 87-010-404 | CAP,ELECT 4,7-50SME              | △ K405                               | ★ 87-029-067 | RES,FUSIBLE 4,7-1/4W   |
| C164     | ★ 87-010-236 | CAP,ELECT 1000-10S               | RY401                                | 87-045-270   | RELAY GSA-297P         |
| C181     | ★ 87-010-379 | CAP,ELECT 22-16SME               | SFR1                                 | ★ 87-021-735 | SFR 220                |
| C182     | ★ 87-010-236 | CAP,ELECT 1000-10S               | SFR2                                 | ★ 87-021-735 | SFR 220                |
| C201     | ★ 87-018-132 | CAP,CERA-SOL SS 2200P            | SFR3                                 | ★ 87-021-739 | SFR 2.2K               |
| C202     | ★ 87-018-132 | CAP,CERA-SOL SS 2200P            | SFR4                                 | ★ 87-021-739 | SFR 2.2K               |
| C204     | ★ 87-018-121 | CAP,CERA-SOL SS 150P             | SFR5                                 | ★ 87-021-738 | SFR 1K                 |
| C205     | ★ 87-010-401 | CAP,ELECT 1-50SME                | SFR6                                 | ★ 87-021-738 | SFR 1K                 |
| C206     | ★ 87-018-132 | CAP,CERA-SOL SS 2200P            | SFR31                                | ★ 87-021-735 | SFR 220                |
| C208     | ★ 87-018-132 | CAP,CERA-SOL SS 2200P            | SFR32                                | ★ 87-021-735 | SFR 220                |
| C209     | ★ 87-018-121 | CAP,CERA-SOL SS 150P             | SFR33                                | ★ 87-021-739 | SFR 2.2K               |
| C210     | ★ 87-010-401 | CAP,ELECT 1-50SME                | SFR34                                | ★ 87-021-739 | SFR 2.2K               |
| C211     | ★ 87-010-221 | CAP,ELECT 470-6,3SME             | --- MAIN-2 CIRCUIT BOARD SECTION --- |              |                        |
| C212     | ★ 87-018-005 | CAP,CERA-CYL 4,7P                | PCB-B                                | *            | MAIN-2 CIRCUIT BOARD   |
| C213     | ★ 87-018-005 | CAP,CERA-CYL 4,7P                | C502                                 | ★ 87-010-101 | CAP,ELECT 220-16SME    |
| C305     | ★ 87-018-119 | CAP,CERA-SOL SS 100P             | C506                                 | ★ 87-010-035 | CAP,ELECT 2,2-50       |
| C306     | ★ 87-018-119 | CAP,CERA-SOL SS 100P             | C507                                 | ★ 87-010-042 | CAP,ELECT 47-25(10S)   |
| C307     | ★ 87-010-379 | CAP,ELECT 22-16SME               | C508                                 | ★ 87-010-112 | CAP,ELECT 100-16       |
| C308     | ★ 87-010-379 | CAP,ELECT 22-16SME               | C509                                 | ★ 87-010-045 | CAP,ELECT 100-25V(10S) |
| C309     | ★ 87-015-951 | CAP,ELECT LL 1-50V               | C510                                 | ★ 87-010-379 | CAP,ELECT 22-16SME     |
| C310     | ★ 87-015-951 | CAP,ELECT LL 1-50V               | C511                                 | ★ 87-010-383 | CAP,ELECT 33-25SME     |
| C331     | ★ 87-010-404 | CAP,ELECT 4,7-50SME              | C512                                 | ★ 87-010-235 | CAP,ELECT 470-16       |
| C355     | ★ 87-010-401 | CAP,ELECT 1-50SME                | C513                                 | ★ 87-010-398 | CAP,ELECT 2200-35VSME  |
| C356     | ★ 87-010-401 | CAP,ELECT 1-50SME                | C516                                 | ★ 87-010-048 | CAP,ELECT 220-25(10S)  |
| C401     | ★ 87-014-081 | CAP,PP 0,01                      | C517                                 | ★ 87-010-237 | CAP,ELECT 1000-16SME   |
| C402     | ★ 87-010-378 | CAP,ELECT 10-16SME               | C519                                 | ★ 87-010-398 | CAP,ELECT 2200-35SME   |
| C407     | ★ 87-010-258 | CAP,ELECT 22-35V SME             | C1001                                | ★ 87-018-122 | CAP,CERA-SOL SS 180P   |
| C408     | ★ 87-010-112 | CAP,ELECT 100-16                 | C1003                                | ★ 87-010-380 | CAP,ELECT 47-16SME     |
| C411     | ★ 87-018-047 | CAP,CERA-SOL S 0,01Y-16          | C1202                                | ★ 87-010-380 | CAP,ELECT 47-16SME     |
| C503     | ★ 87-010-101 | CAP,ELECT 220-16SME              | C1203                                | ★ 87-010-380 | CAP,ELECT 47-16SME     |
| C504     | ★ 87-010-101 | CAP,ELECT 220-16SME              | C1301                                | ★ 87-010-429 | CAP,ELECT 680-16VSME   |
| C505     | ★ 87-010-404 | CAP,ELECT 4,7-50SME              | C1302                                | ★ 87-010-429 | CAP,ELECT 680-16VSME   |
| D101     | 87-027-475   | DIODE,ZENER H26B1                | C1401                                | ★ 87-010-380 | CAP,ELECT 47-16SME     |
| D201     | 87-020-691   | DIODE 1SS132                     | D1402                                | ★ 87-010-380 | CAP,ELECT 47-16SME     |
| D202     | 87-020-691   | DIODE 1SS132                     | D351                                 | 87-020-691   | DIODE 1SS132           |
| D203     | 87-020-691   | DIODE 1SS132                     | D502                                 | 87-020-691   | DIODE 1SS132           |
| D204     | 87-020-691   | DIODE 1SS132                     | D503                                 | 87-020-691   | DIODE 1SS132           |
| D205     | 87-027-286   | DIODE,ZENER H25C1                | D504                                 | 87-020-691   | DIODE 1SS132           |
| D301     | 87-027-633   | DIODE,ZENER H29A2                | D505                                 | 87-027-365   | DIODE SS277B           |
| D302     | 87-052-188   | DIODE 1S188FM                    | D506                                 | 87-027-365   | DIODE SS277B           |
| D401     | 87-020-691   | DIODE 1SS132                     | D507                                 | 87-020-025   | DIODE 2B4841,LC-2      |
| D402     | 87-020-691   | DIODE 1SS132                     | D1001                                | 87-020-691   | DIODE 1SS132           |
| D403     | 87-020-691   | DIODE 1SS132                     | D1002                                | 87-020-691   | DIODE 1SS132           |
| D404     | 87-020-123   | DIODE DS446                      | D1005                                | 87-020-691   | DIODE 1SS132           |
| D405     | 87-020-691   | DIODE 1SS132                     | D1006                                | 87-020-691   | DIODE 1SS132           |
| D407     | 87-020-691   | DIODE 1SS132                     | D1007                                | 87-020-691   | DIODE 1SS132           |
| D408     | 87-020-691   | DIODE 1SS132                     | D1008                                | 87-020-691   | DIODE 1SS132           |
| J451-1   | 87-049-420   | PIN JACK 4P-14,K (LINE OUT L D1) | D1012                                | 87-027-514   | DIODE,ZENER H26B2      |
| J451-2   | +++          | PIN JACK 4P-14,K (LINE OUT R D1) | D1013                                | 87-020-691   | DIODE 1SS132           |
| J451-3   | +++          | PIN JACK 4P-14,K (CD/DAT L)      | D1014                                | 87-027-514   | DIODE,ZENER H26B2      |
| J451-4   | +++          | PIN JACK 4P-14,K (CD/DAT R)      | D1015                                | 87-020-691   | DIODE 1SS132           |
| J452-1   | 87-049-420   | PIN JACK 4P-14 (LINE OUT L D2)   | D1016                                | 87-020-691   | DIODE 1SS132           |
| J452-2   | +++          | PIN JACK 4P-14 (LINE OUT R D2)   | D1101                                | 87-020-691   | DIODE 1SS132           |
| J452-3   | +++          | PIN JACK 4P-14 (LINE IN L D2)    | D1301                                | 87-020-123   | DIODE DS446            |
| J452-4   | +++          | PIN JACK 4P-14 (LINE IN R D2)    | D1302                                | 87-020-123   | DIODE DS446            |
| L1       | ★ 82-202-665 | COIL TRAP 100K                   | D1401                                | 87-020-691   | DIODE 1SS132           |
| L2       | ★ 82-202-665 | COIL TRAP 100K                   | D1402                                | 87-020-691   | DIODE 1SS132           |
| L51      | ★ 82-202-616 | FILTER,LP 100X2                  | D1601                                | 87-020-691   | DIODE 1SS132           |
| L52      | +++          | FILTER,LP 100X2                  | D1602                                | 87-020-691   | DIODE 1SS132           |
| L101     | 82-217-602   | FILTER,42W-5012-12               | D1603                                | 87-020-691   | DIODE 1SS132           |
| L301     | ★ 82-196-603 | COIL TRAP 100K                   | D1604                                | 87-020-691   | DIODE 1SS132           |
| L302     | ★ 82-196-603 | COIL TRAP 100K                   |                                      |              |                        |
| L401     | ★ 82-200-628 | COIL OSC 100KHZ                  |                                      |              |                        |

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| Ref. No.                                    | Part No.     | Description                 | Ref. No.                                 | Part No.     | Description                                  |
|---------------------------------------------|--------------|-----------------------------|------------------------------------------|--------------|----------------------------------------------|
| D1605                                       | 87-020-691   | DIODE 1SS132                | C266                                     | ★ 87-010-545 | CAP,ELECT 0.22-50SME                         |
| D1606                                       | 87-020-691   | DIODE 1SS132                | D261                                     | 87-020-691   | DIODE 1SS132                                 |
| D1607                                       | 87-020-691   | DIODE 1SS132                | VR401                                    | 82-202-623   | VOLUME 250KB(D2 BIAS FINE NOR./CO)           |
| D1608                                       | 87-020-691   | DIODE 1SS132                | --- DISPLAY CIRCUIT BOARD SECTION ---    |              |                                              |
| D1609                                       | 87-020-691   | DIODE 1SS132                | PCB-E                                    | *            | DISPLAY CIRCUIT BOARD                        |
| D1610                                       | 87-020-691   | DIODE 1SS132                | C351                                     | ★ 87-010-265 | CAP,ELECT 33-16V (USL)                       |
| D1611                                       | 87-020-691   | DIODE 1SS132                | C352                                     | ★ 87-010-265 | CAP,ELECT 33-16V (USL)                       |
| D1612                                       | 87-020-691   | DIODE 1SS132                | C1901                                    | ★ 87-018-119 | CAP,CERA-SOL SS 100P                         |
| D1614                                       | 87-020-691   | DIODE 1SS132                | D1817                                    | 87-020-691   | DIODE 1SS132                                 |
| D1615                                       | 87-020-691   | DIODE 1SS132                | D1818                                    | 87-020-691   | DIODE 1SS132                                 |
| D1701                                       | 87-020-691   | DIODE 1SS132                | D1901                                    | 87-027-393   | DIODE,ZENER HZ4C2                            |
| D1702                                       | 87-020-691   | DIODE 1SS132                | FL1901                                   | 82-217-603   | FL,FG116P9 (COUNTER)                         |
| D1703                                       | 87-020-691   | DIODE 1SS132                | FL1902                                   | 81-199-635   | FL,BG-232ZK 12DOT (PEAK PROGRAM LEVEL METER) |
| D1704                                       | 87-020-691   | DIODE 1SS132                | LED367                                   | 87-027-542   | LED,LN217RP (D1 DOLBY NR C)                  |
| △ F2                                        | 87-035-331   | FUSE,GHS-1.25A (U ONLY)     | LED368                                   | 87-027-543   | LED,LN317GP (D1 DOLBY NR B)                  |
| L1001                                       | ★ 82-202-624 | COIL OSC LC6520H            | LED369                                   | 87-027-542   | LED,LN217RP (D2 DOLBY NR C)                  |
| R523                                        | ★ 87-025-440 | RES,MFO 1W-330              | LED370                                   | 87-027-543   | LED,LN317GP (D2 DOLBY NR B)                  |
| R524                                        | ★ 87-025-440 | RES,MFO 1W-330              | LED401                                   | 87-027-637   | LED,TLG226 (D2 ADMS)                         |
| R1014                                       | ★ 82-202-652 | RES,ARRAY 47KX9P            | LED1811                                  | 87-001-138   | LED,SLP481C50,Y (SOURCE)                     |
| R1015                                       | ★ +++        | RES,ARRAY 47KX9P            | LED1812                                  | 87-001-122   | LED,SLP381C50,G (TAPE)                       |
| R1028                                       | ★ +++        | RES,ARRAY 47KX9P            | LED1813                                  | 87-001-137   | LED,SLP981C50,R (SYNC DUB,NORM)              |
| R1029                                       | ★ +++        | RES,ARRAY 47KX9P            | LED1814                                  | 87-001-137   | LED,SLP981C50,R (SYNC DUB,HIGH)              |
| R1030                                       | ★ +++        | RES,ARRAY 47KX9P            | R358                                     | ★ 87-025-081 | REG,MFO 2W-150                               |
| R1031                                       | ★ +++        | RES,ARRAY 47KX9P            | S1817                                    | 87-031-893   | TACT SW (SYNC DUB,NORM)                      |
| R1032                                       | ★ +++        | RES,ARRAY 47KX9P            | S1818                                    | 87-031-893   | TACT SW (SYNC DUB,HIGH)                      |
| R1033                                       | ★ +++        | RES,ARRAY 47KX9P            | S1819                                    | 87-031-893   | TACT SW (MONITOR)                            |
| R1020                                       | ★ 82-202-654 | RES,ARRAY 10KX9P            | S1829                                    | 87-031-893   | TACT SW (D1 COUNTER RESET)                   |
| R1021                                       | ★ +++        | RES,ARRAY 10KX9P            | S1830                                    | 87-031-893   | TACT SW (D2 COUNTER RESET)                   |
| R1022                                       | ★ +++        | RES,ARRAY 10KX9P            | --- DOLBY HX-2 CIRCUIT BOARD SECTION --- |              |                                              |
| R1023                                       | ★ +++        | RES,ARRAY 10KX9P            | PCB-F                                    | *            | DOLBY HX-2 CIRCUIT BOARD                     |
| R1024                                       | ★ +++        | RES,ARRAY 10KX9P            | C81                                      | ★ 87-010-421 | CAP,ELECT 4.7-50SRE                          |
| R1025                                       | ★ +++        | RES,ARRAY 10KX9P            | C82                                      | ★ 87-010-421 | CAP,ELECT 4.7-50SRE                          |
| R1026                                       | ★ +++        | RES,ARRAY 10KX9P            | C83                                      | ★ 87-010-401 | CAP,ELECT 1-50SME                            |
| R1027                                       | ★ +++        | RES,ARRAY 10KX9P            | C84                                      | ★ 87-010-401 | CAP,ELECT 1-50SME                            |
| R1034                                       | ★ 82-202-653 | RES,ARRAY 47KX8P            | C85                                      | ★ 87-018-128 | CAP,CERA-SOL 560P                            |
| R1035                                       | ★ +++        | RES,ARRAY 47KX8P            | C86                                      | ★ 87-018-128 | CAP,CERA-SOL 560P                            |
| R1036                                       | ★ +++        | RES,ARRAY 47KX8P            | C901                                     | ★ 87-018-123 | CAP,CERA-SOL SS 220P                         |
| R1037                                       | ★ +++        | RES,ARRAY 47KX8P            | C902                                     | ★ 87-018-123 | CAP,CERA-SOL SS 220P                         |
| R1038                                       | ★ +++        | RES,ARRAY 47KX8P            | C903                                     | ★ 87-014-173 | CAP,PP 1000P-G                               |
| R1039                                       | ★ +++        | RES,ARRAY 47KX8P            | C904                                     | ★ 87-014-173 | CAP,PP 1000P-G                               |
| R1040                                       | ★ +++        | RES,ARRAY 47KX8P            | C907                                     | ★ 87-018-121 | CAP,CERA-SOL SS 150P                         |
| R1044                                       | ★ 82-202-632 | RES,ARRAY 4.7KX5P           | C908                                     | ★ 87-018-121 | CAP,CERA-SOL SS 150P                         |
| R1045                                       | ★ +++        | RES,ARRAY 4.7KX5P           | C911                                     | ★ 87-018-131 | CAP,CERA-SOL SS 1000P                        |
| R1046                                       | ★ +++        | RES,ARRAY 4.7KX5P           | C912                                     | ★ 87-018-131 | CAP,CERA-SOL SS 1000P                        |
| R1047                                       | ★ +++        | RES,ARRAY 4.7KX5P           | C913                                     | ★ 87-018-131 | CAP,CERA-SOL SS 1000P                        |
| R1301                                       | ★ 87-025-437 | RES,MFO 82-1W               | C914                                     | ★ 87-018-131 | CAP,CERA-SOL SS 1000P                        |
| R1304                                       | ★ 87-025-437 | RES,MFO 82-1W               | C915                                     | ★ 87-018-131 | CAP,CERA-SOL SS 1000P                        |
| SFR1401                                     | ★ 87-021-864 | SFR 10K                     | C916                                     | ★ 87-018-131 | CAP,CERA-SOL SS 1000P                        |
| SFR1402                                     | ★ 87-021-865 | SFR 22K                     | C919                                     | ★ 87-018-047 | CAP,CERA-SOL S 0.01Y-16                      |
| --- H.P.AMP CIRCUIT BOARD SECTION ---       |              |                             | C920                                     | ★ 87-010-382 | CAP,ELECT 22-25SME                           |
| PCB-C                                       | *            | H.P.AMP CIRCUIT BOARD       | D901                                     | 87-020-156   | DIODE MC931                                  |
| C251                                        | ★ 87-010-401 | CAP,ELECT 1-50SME           | D902                                     | 87-020-156   | DIODE MC931                                  |
| C252                                        | ★ 87-010-401 | CAP,ELECT 1-50SME           | D903                                     | 87-027-026   | DIODE,ZENER HZ-5C1                           |
| C253                                        | ★ 87-010-401 | CAP,ELECT 1-50SME           | L61                                      | ★ 82-196-603 | COIL TRAP 100K                               |
| C254                                        | ★ 87-010-401 | CAP,ELECT 1-50SME           | L62                                      | ★ 82-196-603 | COIL TRAP 100K                               |
| C255                                        | ★ 87-010-235 | CAP,ELECT 470-16            | L63                                      | ★ 87-003-129 | COIL 6.8MHJ                                  |
| C257                                        | ★ 87-010-101 | CAP,ELECT 220-16SME         | L64                                      | ★ 87-003-129 | COIL 6.8MHJ                                  |
| C258                                        | ★ 87-010-101 | CAP,ELECT 220-16SME         | L65                                      | ★ 87-003-125 | COIL 3.3MHJ                                  |
| --- METER CONTROL CIRCUIT BOARD SECTION --- |              |                             | L66                                      | ★ 87-003-125 | COIL 3.3MHJ                                  |
| PCB-D                                       | *            | METER CONTROL CIRCUIT BOARD | L901                                     | ★ 82-202-619 | COIL HX 100K,AM                              |
| C265                                        | ★ 87-010-545 | CAP,ELECT 0.22-50SME        | L902                                     | ★ 82-202-619 | COIL HX 100K,AM                              |

※ Please order the all parts for  
this model to Japan.

| Ref. No.                                   | Part No.     | Description                   | Ref. No.                                   | Part No.     | Description                       |
|--------------------------------------------|--------------|-------------------------------|--------------------------------------------|--------------|-----------------------------------|
| SFR61                                      | ★ 87-021-864 | SFR 10K                       | S101                                       | 87-036-033   | SLIDE SW (INPUT)                  |
| SFR62                                      | ★ 87-021-864 | SFR 10K                       | S1820                                      | 87-036-033   | SLIDE SW (BLANK SKIP)             |
| SFR901                                     | ★ 87-021-868 | SFR 100K                      | --- SWITCH-4 CIRCUIT BOARD SECTION ---     |              |                                   |
| SFR902                                     | ★ 87-021-868 | SFR 100K                      | PCB-L                                      | *            | SWITCH-4 CIRCUIT BOARD            |
| --- KEY SWITCH-1 CIRCUIT BOARD SECTION --- |              |                               | D1825                                      | 87-020-691   | DIODE 1SS132                      |
| PCB-G                                      | *            | KEY SWITCH-1 CIRCUIT BOARD    | S1825                                      | 82-191-657   | SLIDE SW (TIMER)                  |
| D1801                                      | 87-020-691   | DIODE 1SS132                  | S1828                                      | 82-191-657   | SLIDE SW (PHONES)                 |
| D1803                                      | 87-020-691   | DIODE 1SS132                  | --- POWER SWITCH CIRCUIT BOARD SECTION --- |              |                                   |
| D1805                                      | 87-020-691   | DIODE 1SS132                  | △ PCB-M                                    | *            | POWER SWITCH CIRCUIT BOARD        |
| D1807                                      | 87-020-691   | DIODE 1SS132                  | △ C521                                     | 87-019-110   | SPARK KILLER,0.01 (H ONLY)        |
| LED371                                     | 87-001-122   | LED,SLP381C50,G (D1 DIRECT▶)  | △ C521                                     | 87-019-112   | SPARK KILLER,0.001 (U,E,K,Z ONLY) |
| LED372                                     | 87-001-122   | LED,SLP381C50,G (D1 DIRECT◀)  | △ S1                                       | 87-036-115   | PUSH SW (POWER)                   |
| LED1804                                    | 87-001-122   | LED,SLP381C50,G (D1 PLAY)     | --- VOLUME-1 CIRCUIT BOARD SECTION ---     |              |                                   |
| LED1805                                    | 87-001-122   | LED,SLP381C50,G (D1 REV PLAY) | PCB-N                                      | *            | VOLUME-1 CIRCUIT BOARD            |
| S1801                                      | 87-031-893   | TACT SW (D1 MS◀◀)             | D102                                       | 88-052-188   | DIODE,1SS188FM                    |
| S1803                                      | 87-031-893   | TACT SW (D1 REV◀)             | VR301                                      | 82-217-604   | VOLUME,10KAX2 (REC LEVEL)         |
| S1805                                      | 87-031-893   | TACT SW (D1 FWD▶)             | --- VOLUME-2 CIRCUIT BOARD SECTION ---     |              |                                   |
| S1807                                      | 87-031-893   | TACT SW (D1 MS▶▶)             | PCB-O                                      | *            | VOLUME-2 CIRCUIT BOARD            |
| --- SWITCH-1 CIRCUIT BOARD SECTION ---     |              |                               | VR401                                      | 82-202-623   | VOLUME,250KB (BIAS FINE)          |
| PCB-H                                      | *            | SWITCH-1 CIRCUIT BOARD        | --- H.P.JACK CIRCUIT BOARD SECTION ---     |              |                                   |
| D1804                                      | 87-020-691   | DIODE 1SS132                  | PCB-P                                      | *            | H.P.JACK CIRCUIT BOARD            |
| D1806                                      | 87-020-691   | DIODE 1SS132                  | J251                                       | 87-049-827   | JACK (PHONES)                     |
| D1824                                      | 87-020-691   | DIODE 1SS132                  | --- RELAY CIRCUIT BOARD SECTION ---        |              |                                   |
| LED1802                                    | 87-001-138   | LED,SLP481C50,Y (D1 PAUSE)    | PCB-Q                                      | *            | RELAY CIRCUIT BOARD               |
| S1804                                      | 87-031-893   | TACT SW (D1 STOP)             | D1819                                      | 87-020-691   | DIODE 1SS132                      |
| S1806                                      | 87-031-893   | TACT SW (D1 PAUSE)            | --- TR CIRCUIT BOARD SECTION ---           |              |                                   |
| S1824                                      | 87-036-032   | SLIDE SW (D1 REVERSE MODE)    | PCB-R                                      | *            | TR CIRCUIT BOARD                  |
| S1826                                      | 87-036-032   | SLIDE SW (D1 DOLBY B-C NR)    | --- FUSE CIRCUIT BOARD SECTION ---         |              |                                   |
| --- KEY SWITCH-2 CIRCUIT BOARD SECTION --- |              |                               | △ PCB-S                                    | *            | FUSE CIRCUIT BOARD                |
| PCB-I                                      | *            | KEY SWITCH-2 CIRCUIT BOARD    | △ F1                                       | 87-033-147   | FUSE CLAMP                        |
| D1809                                      | 87-020-691   | DIODE 1SS132                  | △ F1                                       | 87-035-356   | FUSE,T250MMA (E,K,Z ONLY)         |
| D1810                                      | 87-020-691   | DIODE 1SS132                  | △ F1                                       | 87-035-294   | FUSE,500MMA (U ONLY)              |
| D1813                                      | 87-020-691   | DIODE 1SS132                  | △ F1                                       | 87-035-249   | FUSE,1A (H ONLY)                  |
| D1815                                      | 87-020-691   | DIODE 1SS132                  | --- DECK CIRCUIT BOARD SECTION ---         |              |                                   |
| D1826                                      | 87-020-691   | DIODE 1SS132                  | PCB-T                                      | *            | DECK CIRCUIT BOARD (D1)           |
| D1827                                      | 87-020-691   | DIODE 1SS132                  | S1102                                      | 87-036-039   | PUSH SW D2A2120-4 (CO,D1)         |
| LED1806                                    | 87-001-137   | LED,SLP981C50,R (D2◀◀MS)      | S1103                                      | 87-036-040   | PUSH SW D2A2110-3 (CAST,D1)       |
| LED1807                                    | 87-001-122   | LED,SLP381C50,G (D2▶▶MS)      | S1106                                      | 87-036-039   | PUSH SW D2A2120-4 (DIRE,D1)       |
| LED1816                                    | 87-001-137   | LED,SLP981C50,R (D2◀◀MS)      | SFR110                                     | ★ 87-021-966 | SFR 4.7K                          |
| LED1817                                    | 87-001-122   | LED,SLP381C50,G (D2▶▶MS)      | SFR110                                     | ★ 87-021-966 | SFR 4.7K                          |
| S1809                                      | 87-031-893   | TACT SW (D2◀◀MS)              | SOL110                                     | 86-535-611   | SOLENOID X-3 (PLAY,D1)            |
| S1810                                      | 87-031-893   | TACT SW (D2 REC)              | SOL110                                     | 86-535-612   | SOLENOID X-3 (FR,D1)              |
| S1813                                      | 87-031-893   | TACT SW (D2▶▶PLAY)            | --- SENSOR CIRCUIT BOARD SECTION ---       |              |                                   |
| S1815                                      | 87-031-893   | TACT SW (D2▶▶MS)              | PCB-U                                      | *            | SENSOR CIRCUIT BOARD (D1)         |
| --- SWITCH-2 CIRCUIT BOARD SECTION ---     |              |                               | CP1101                                     | 87-020-755   | PHOTO SENSOR SPI-900-0102(D1)     |
| PCB-J                                      | *            | SWITCH-2 CIRCUIT BOARD        | --- AUTO STOP CIRCUIT BOARD SECTION ---    |              |                                   |
| D1812                                      | 87-020-691   | DIODE 1SS132                  | PCB-V                                      | 81-505-605   | AUTO STOP CIRCUIT BOARD (D2)      |
| D1814                                      | 87-020-691   | DIODE 1SS132                  | CP1151                                     | 87-027-644   | PHOTO SENSOR NJL-S141EA           |
| D1816                                      | 87-020-691   | DIODE 1SS132                  | --- DOLBY NR-1 CIRCUIT BOARD SECTION ---   |              |                                   |
| LED1807                                    | 87-001-138   | LED,SLP481C50,Y (D2 PAUSE)    | 87-030-114 DOLBY UNIT HA12088GN (W/PCB-W)  |              |                                   |
| LED1810                                    | 87-001-137   | LED,SLP981C50,R (D2 REC MUTE) |                                            |              |                                   |
| S1812                                      | 87-031-893   | TACT SW (D2 STOP)             |                                            |              |                                   |
| S1814                                      | 87-031-893   | TACT SW (D2 PAUSE)            |                                            |              |                                   |
| S1816                                      | 87-031-893   | TACT SW (D2 REC MUTE)         |                                            |              |                                   |
| S1827                                      | 87-036-032   | SLIDE SW (D2 DOLBY B-C NR)    |                                            |              |                                   |
| --- SWITCH-3 CIRCUIT BOARD SECTION ---     |              |                               |                                            |              |                                   |
| PCB-K                                      | *            | SWITCH-3 CIRCUIT BOARD        |                                            |              |                                   |
| D1820                                      | 87-020-691   | DIODE 1SS132                  |                                            |              |                                   |

※ Please order the all parts for  
this model to Japan

| Ref. No. | Part No. | Description |
|----------|----------|-------------|
|----------|----------|-------------|

=== DOLBY NR-2 CIRCUIT BOARD SECTION ===

87-030-114 DOLBY UNIT HA12088GN (W/PCB-X)

=== DOLBY NR-3 CIRCUIT BOARD SECTION ===

87-030-114 DOLBY UNIT HA12088GN (W/PCB-Y)

=== MISCELLANEOUS ===

|         |              |                               |
|---------|--------------|-------------------------------|
| △       | * 87-034-732 | AC CORD (H ONLY)              |
| △       | * 87-034-731 | AC CORD (U ONLY)              |
| △       | * 82-034-736 | AC CORD (E,Z ONLY)            |
| △       | * 87-034-734 | AC CORD (K ONLY)              |
| △       | * 87-085-184 | AC CORD BUSHING (H ONLY)      |
| △       | * 87-085-189 | AC CORD BUSHING (U ONLY)      |
| △       | * 87-085-185 | AC CORD BUSHING (E,K,Z ONLY)  |
| CON2    | * 82-200-623 | CONNECTOR 9P ASSY RH-EH       |
| CON3    | * 82-200-621 | CONNECTOR 6P ASSY PH          |
| EH      | * 87-046-288 | E HEAD (D2)                   |
| LED501* | 87-027-944   | LED SLF-301C (D1 LIGHT)       |
| LED502* | 87-027-944   | LED,SLF-301C (D2 LIGHT)       |
| M1101   | 87-045-235   | MOTOR MMA6B2LW (D1)           |
| M1151   | 81-505-604   | REEL MOTOR (D2)               |
| M1152   | 87-045-235   | MOTOR MMA6B2LW (D2)           |
| PH      | 87-046-297   | PB HEAD (D1)                  |
| RPH     | 87-046-194   | RP HEAD HADKH27001 (D2)       |
| △SW1    | 87-031-586   | ROTARY SW (AC VOLT.) (H ONLY) |
| S1152   | 81-505-601   | LEAF SW GEAR CAM (PLAY,D2)    |
| S1153   | 81-505-601   | LEAF SW GEAR CAM (PAUSE,D2)   |
| S1154   | 81-505-607   | LEAF SW (CAST,D2)             |
| S1155   | 81-505-607   | LEAF SW (ENA A,D2)            |
| S1157   | 81-505-607   | LEAF SW (MT,D2)               |
| S1158   | 81-505-607   | LEAF SW (CO,D2)               |
| SOL115  | 81-505-603   | SOLENOID 9ME-A (PLAY,D2)      |
| SOL115  | 81-505-603   | SOLENOID 9ME-A (PAUSE,D2)     |
| △TS01   | * 82-104-648 | POWER TRANSFORMER (H ONLY)    |
| △TS01   | * 82-104-645 | POWER TRANSFORMER (U ONLY)    |
| △TS01   | * 82-104-646 | POWER TRANSFORMER (E,Z ONLY)  |
| △TS01   | * 82-104-647 | POWER TRANSFORMER (K ONLY)    |

Combination circuit board C 86-535-601

PCB-T 86-535-602

PCB-U 86-535-603



2SD1275  
2SD1276



DTA114



2SA952  
2SA1015  
2SC1815  
2SC2001  
2SC2120  
2SC2240  
2SD1111  
2SD1302

Combination circuit board A 82-217-605

PCB-A 82-217-606

PCB-B 82-217-607

PCB-C 82-217-609

PCB-D 82-217-610

PCB-R 82-217-608

Combination circuit board B 82-217-611

PCB-E 82-217-620

PCB-F 82-217-623

PCB-G 82-217-612

PCB-H 82-217-613

PCB-I 82-217-615

PCB-J 82-217-616

PCB-K 82-217-614

PCB-L 82-217-617

PCB-M 82-217-618

PCB-N 82-217-621

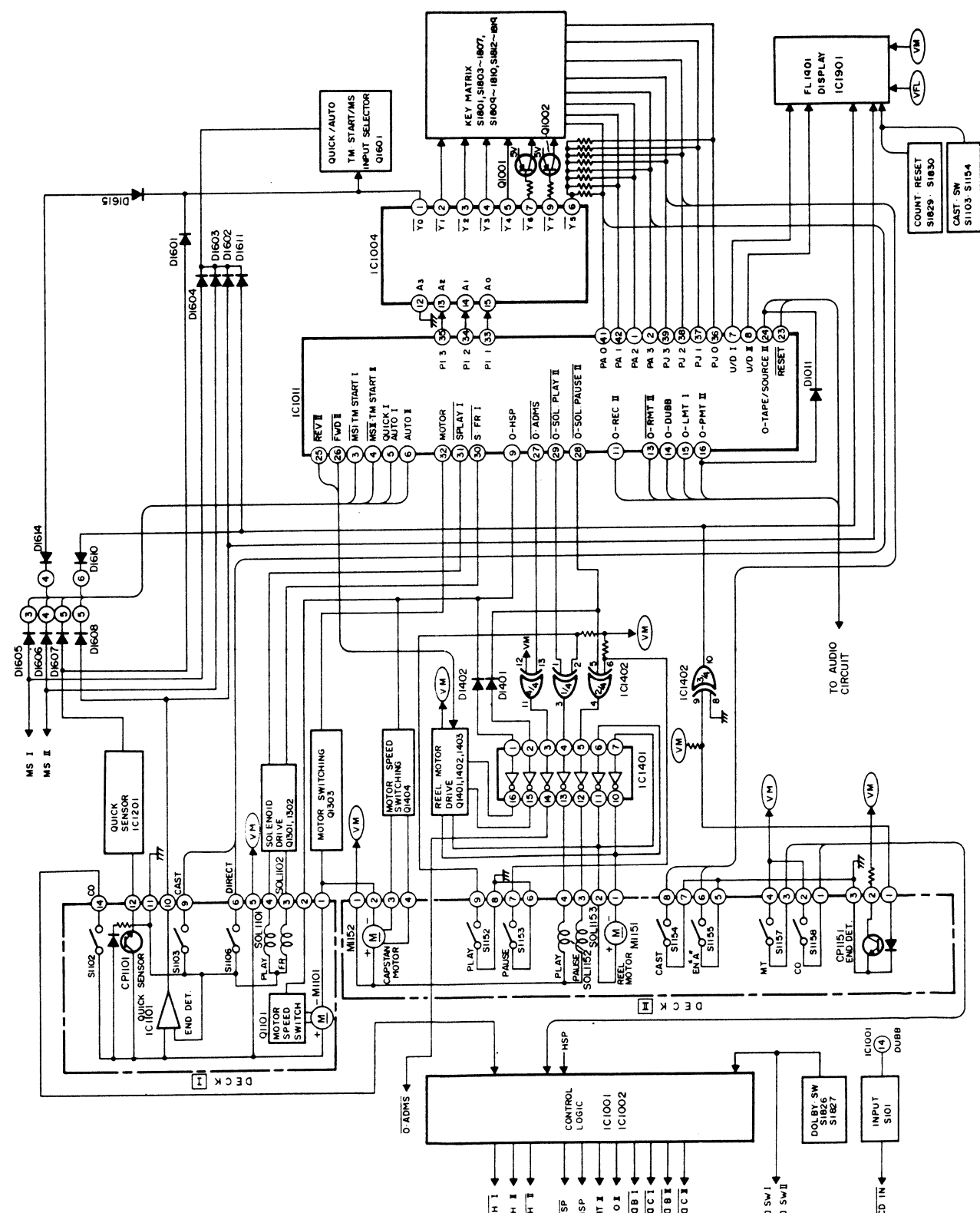
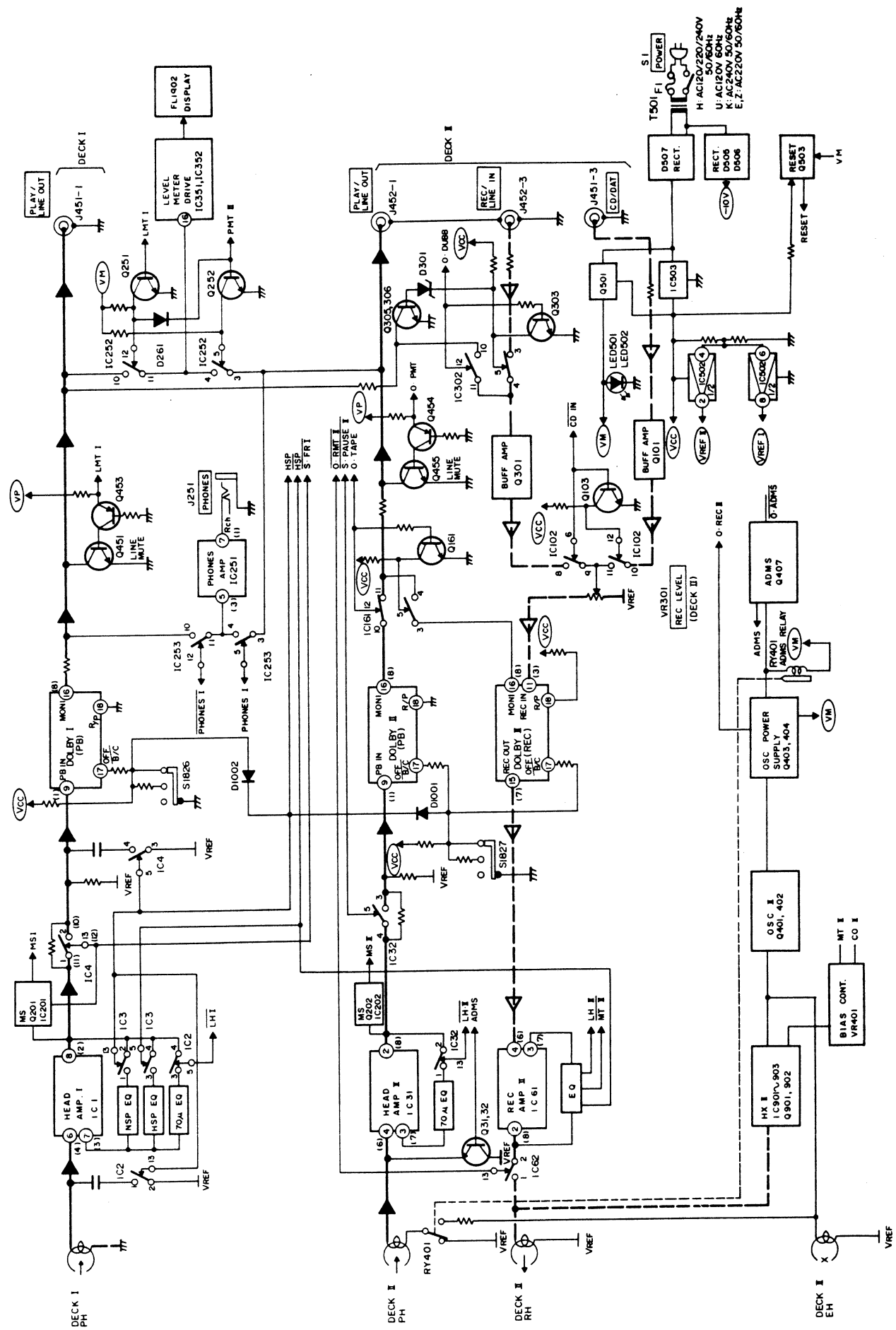
PCB-O 82-217-622

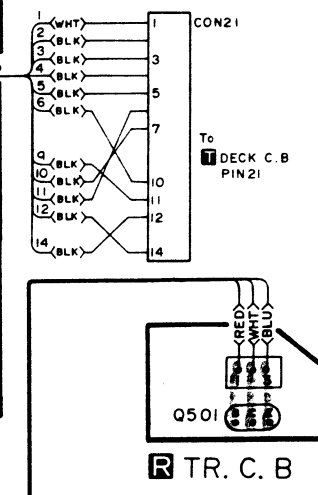
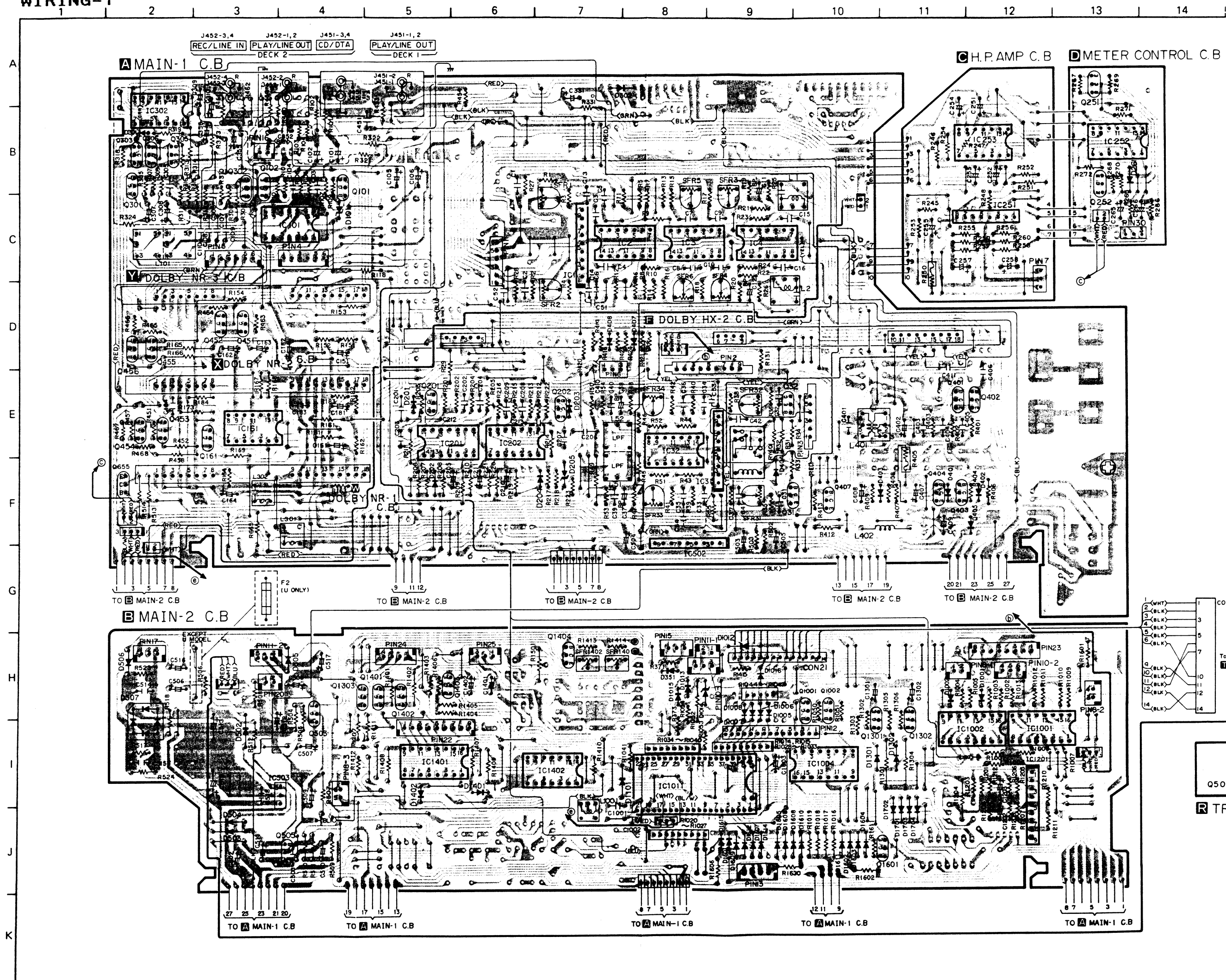
PCB-P 82-217-619

PCB-Q 82-217-640

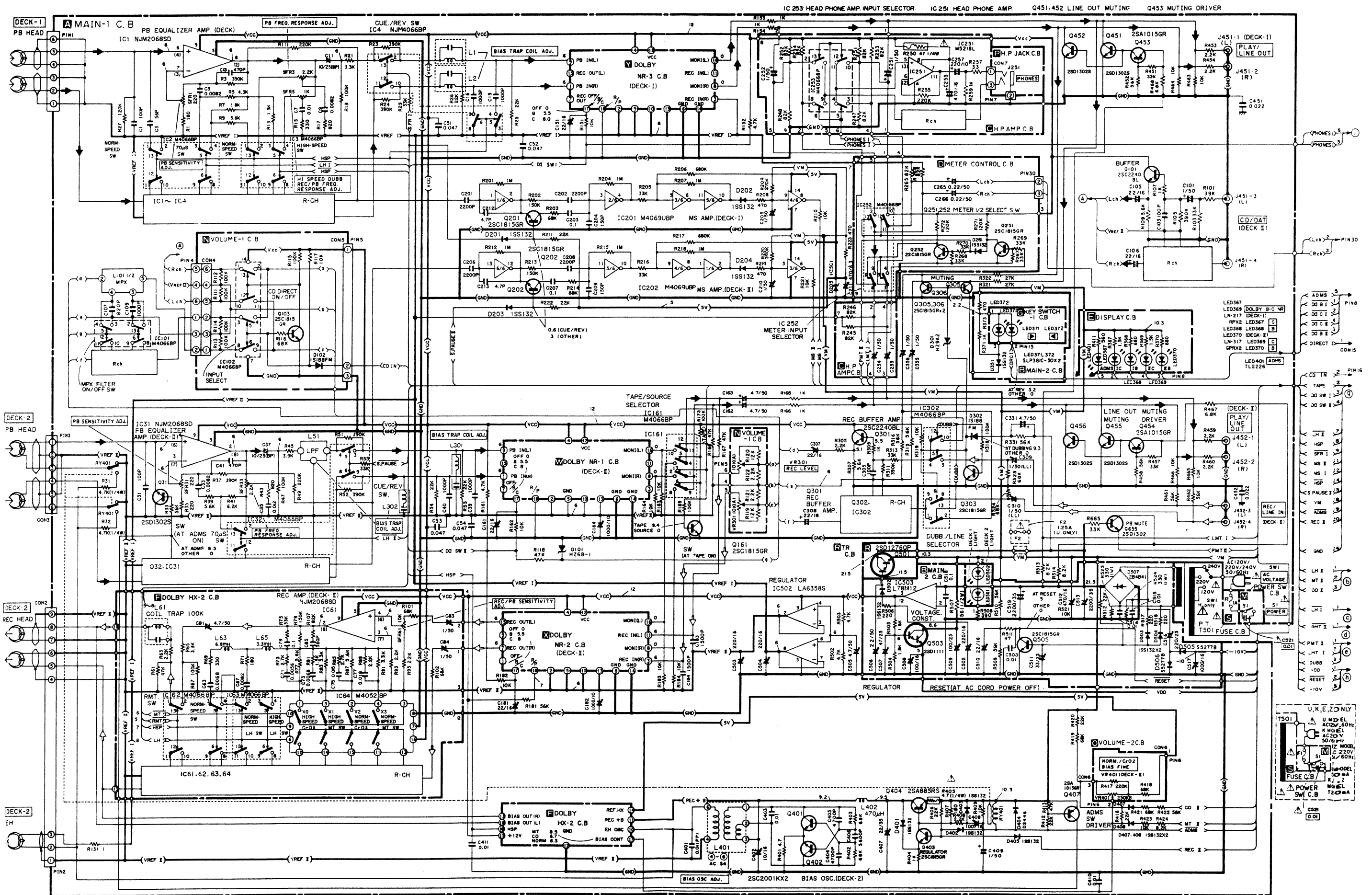
PCB-S 82-217-624

### BLOCK DIAGRAM

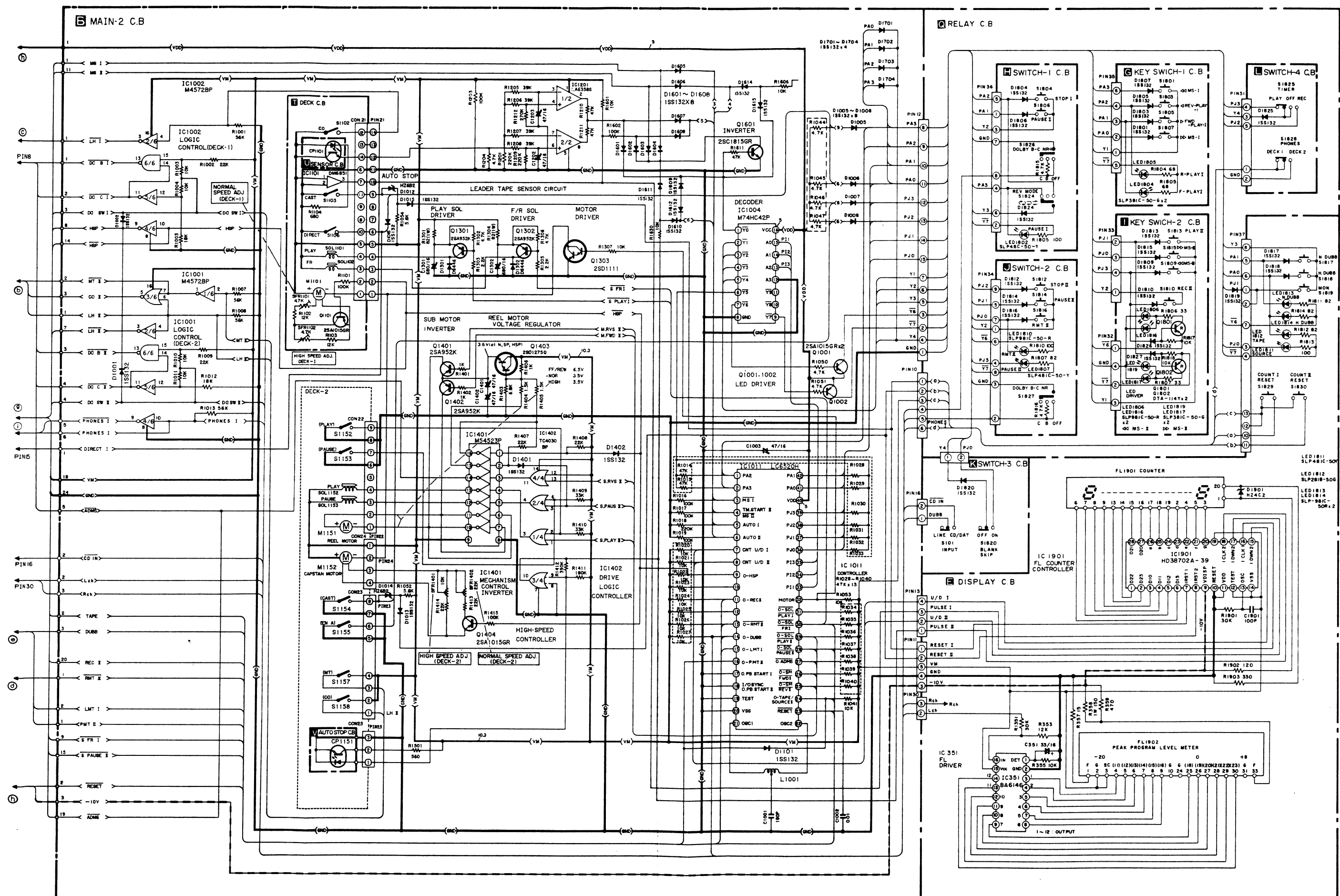




SCHEMATIC DIAGRAM-1

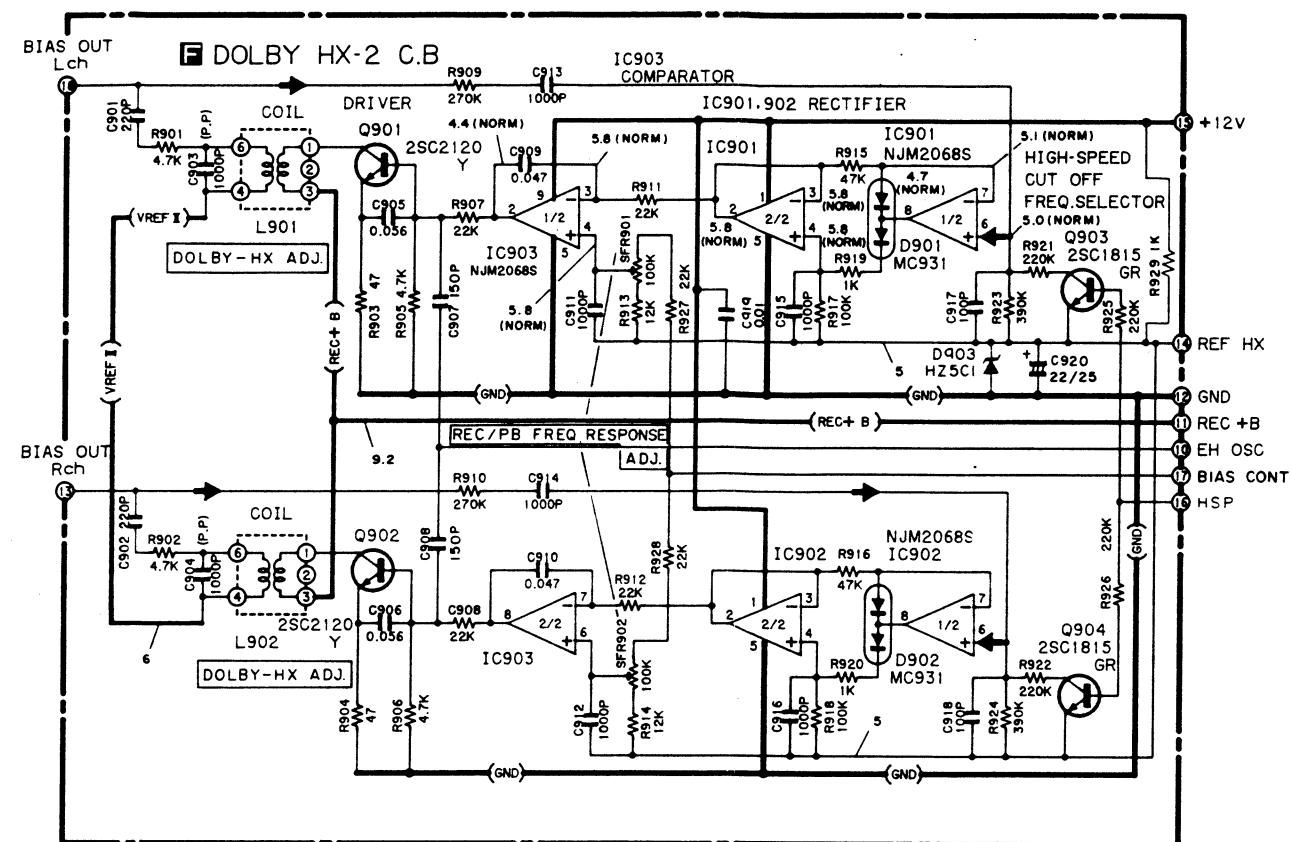


**SCHEMATIC DIAGRAM-2**

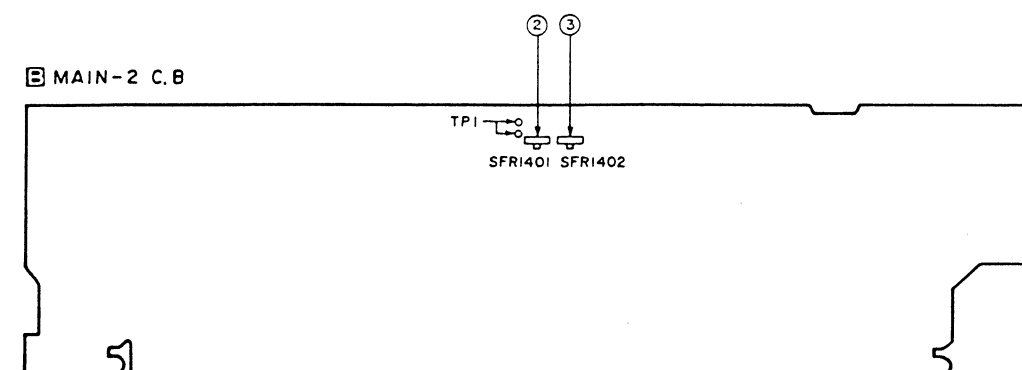
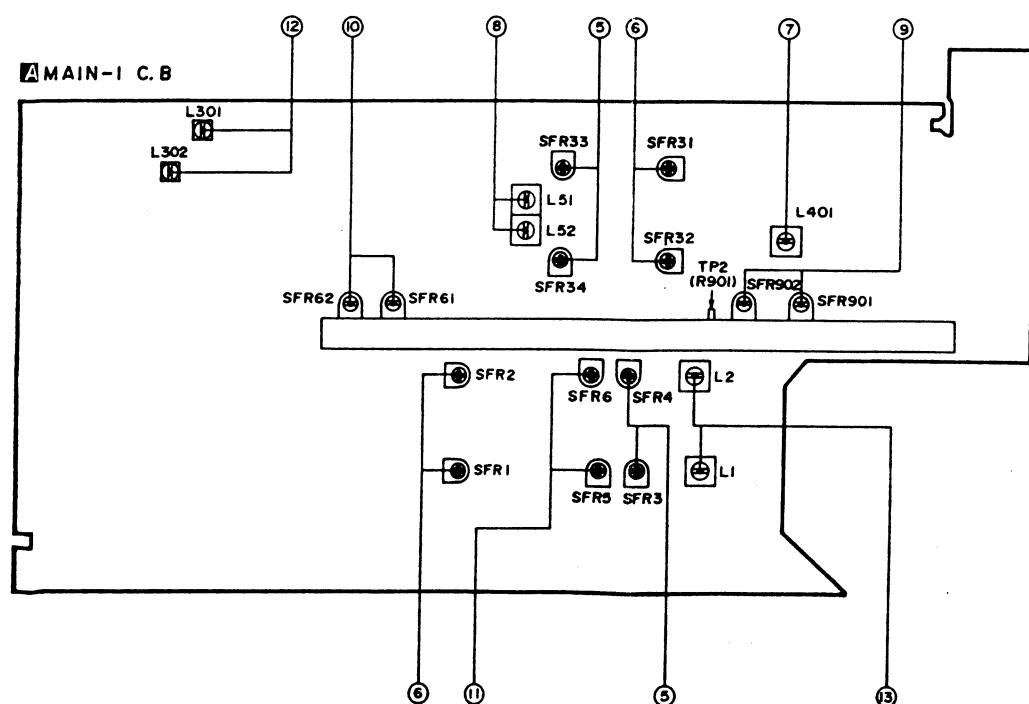




# SCHEMATIC DIAGRAM-3



## ADJUSTMENT



- High Speed Adjustment (DECK-1)  
Settings : • Test tape : TTA-111H  
• Test point : LINE OUT  
• Adjustment location : SFR 1102  
Method : Set up the high speed condition.  
Adjust for 3kHz.
- High Speed Adjustment (DECK-2)  
Settings : • Test tape : TTA-111H  
• Test point : LINE OUT  
• Adjustment location : SFR 1401  
Method : Make pins of TP1 shorted to set up the high speed condition. Then play back the test tape. Adjust for 3kHz.
- Normal Speed Adjustment (DECK-1, DECK-2)  
Settings : • Test tape : TTA-111S  
• Test point : LINE OUT  
• Adjustment location : SFR 1101 (DECK-1)  
SFR 1402 (DECK-2)  
Method : Play back the test tape, adjust for 3kHz.
- Head Azimuth Adjustment (DECK-1, DECK-2)  
Settings : • Test tape : TTA-317H  
• Test point : LINE OUT  
• Adjustment location : Head azimuth adjustment screw  
Method : Play back the 10kHz signal of the test tape, and adjust for maximum output.
- PB Frequency Response Adjustment (DECK-1, DECK-2)  
Settings : • Test tape : TTA-317H  
• Test point : LINE OUT  
• DOLBY NR switch : OFF  
• Adjustment location : SFR 3 (DECK-1, Lch)  
SFR 4 (DECK-1, Rch)  
SFR 38 (DECK-2, Lch)  
SFR 34 (DECK-2, Rch)  
Method : Play back the test tape, and adjust so that 10kHz signal becomes  $1 \pm 0.5\text{dB}$  against 1kHz signal.
- PB Sensitivity Adjustment (DECK-1, DECK-2)  
Settings : • Test tape : TTA-161  
• Test point : LINE OUT  
• DOLBY NR switch : OFF  
• Adjustment location : SFR 1 (DECK-1, Lch)  
SFR 2 (DECK-1, Rch)  
SFR 31 (DECK-2, Lch)  
SFR 32 (DECK-2, Rch)  
Method : Play back the test tape, and adjust for  $560\text{mV} \pm 0.5\text{dB}$ .
- REC OSC Frequency Adjustment (DECK-2)  
Settings : • Test tape : TTA-119K  
• Test point : TP2  
• Adjustment location : L 401  
Method : Set in REC mode and adjust for  $100\text{kHz} \pm 1\text{kHz}$ .
- Bias OSC Trap Coil Adjustment (DECK-2)  
Settings : • Test tape : NORM. CASSETTE removed tape.  
• Test point : LINE OUT  
• TAPE MONITOR switch : TAPE  
• Adjustment location : L 51 (Lch)  
L 52 (Rch)  
Method : Set the DECK-2 in REC mode. Adjust for minimum level of the bias leakage.
- REC/PB Frequency Response Adjustment (DECK-2)  
Settings : • Test tape : TTA-119H  
• Test point : LINE OUT  
• Input signal : 1kHz,  $-20\text{dB}(4\text{mV})$   
10kHz,  $-20\text{dB}(4\text{mV})$   
• REC VR : Center click point.  
• DOLBY NR switch : OFF  
• Adjustment location : SFR 901 (Lch)  
SFR 902 (Rch)  
Method : Record the 1kHz and 10kHz signals, then play back the two signals and adjust so that 10kHz signal becomes higher of  $0.5 \pm 0.5\text{dB}$  than 1kHz signal.

12. Dolby "C" NR Bias OSC Trap Coil Adjustment  
Settings : • Test tape : TTA-119K  
• Test point : LINE OUT  
• TAPE MONITOR switch :  
TAPE

Wow & flutter :                    Less than 0.065 %  
                                         (DECK 1)  
                                         Less than 0.046 %  
                                         (DECK 2) (FWD. /REV.)

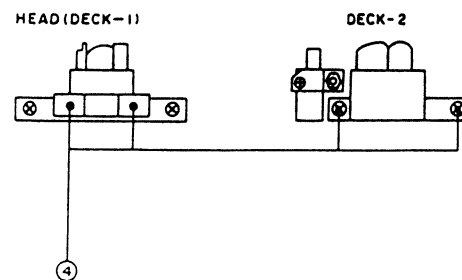
Pinch roller pressure :            290 ± 70g (DECK 1)  
                                         (2.84 ± 0.69N)  
                                         350 ± 30g (DECK 2)  
                                         (3.43 ± 0.3N)

Take-up torque :                    30 ~ 60g-cm (DECK 1)  
                                         (0.29 ~ 0.59mN·m)  
                                         35 ± 6g-cm (DECK 2)  
                                         (0.34 ± 0.06mN·m)

F. F & REW torque :               130 ± 30g-cm (DECK 1)  
                                         (1.27 ± 0.29mN·m)  
                                         150 ± 30g-cm (DECK 2)  
                                         (1.47 ± 0.29mN·m)

Back tension :                      2.5 ~ 5.5g-cm (DECK 1)  
                                         (0.025 ± 0.054mN·m)  
                                         5 ± 1g-cm (DECK 2)  
                                         (0.05 ± 0.001mN·m)

PB output level :                   500 ± 50mV (TTA-161)



- Method :** Make in high speed dubbing mode, adjust for minimum level of the bias leakage.

REC/PB output : 0 VU  $\pm$  1.5 dB

REC/PB S/N ratio : More than 42/48dB  
(METAL, CrO<sub>2</sub>,  
DOLBY-NR C OFF/ON)  
More than 39/46dB  
(NORMAL, DOLBY-NR  
OFF/ON)

Distortion (REC/PB) : Less than 2% (METAL,  
CrO<sub>2</sub>, NORMAL)

Noise (PB) : Less than 2.5/1.2 mV  
(METAL, CrO<sub>2</sub> DOLBY  
-NR C OFF/ON)  
Less than 3.0/1.5 mV  
(NORMAL, DOLBY  
-NR C OFF/ON)

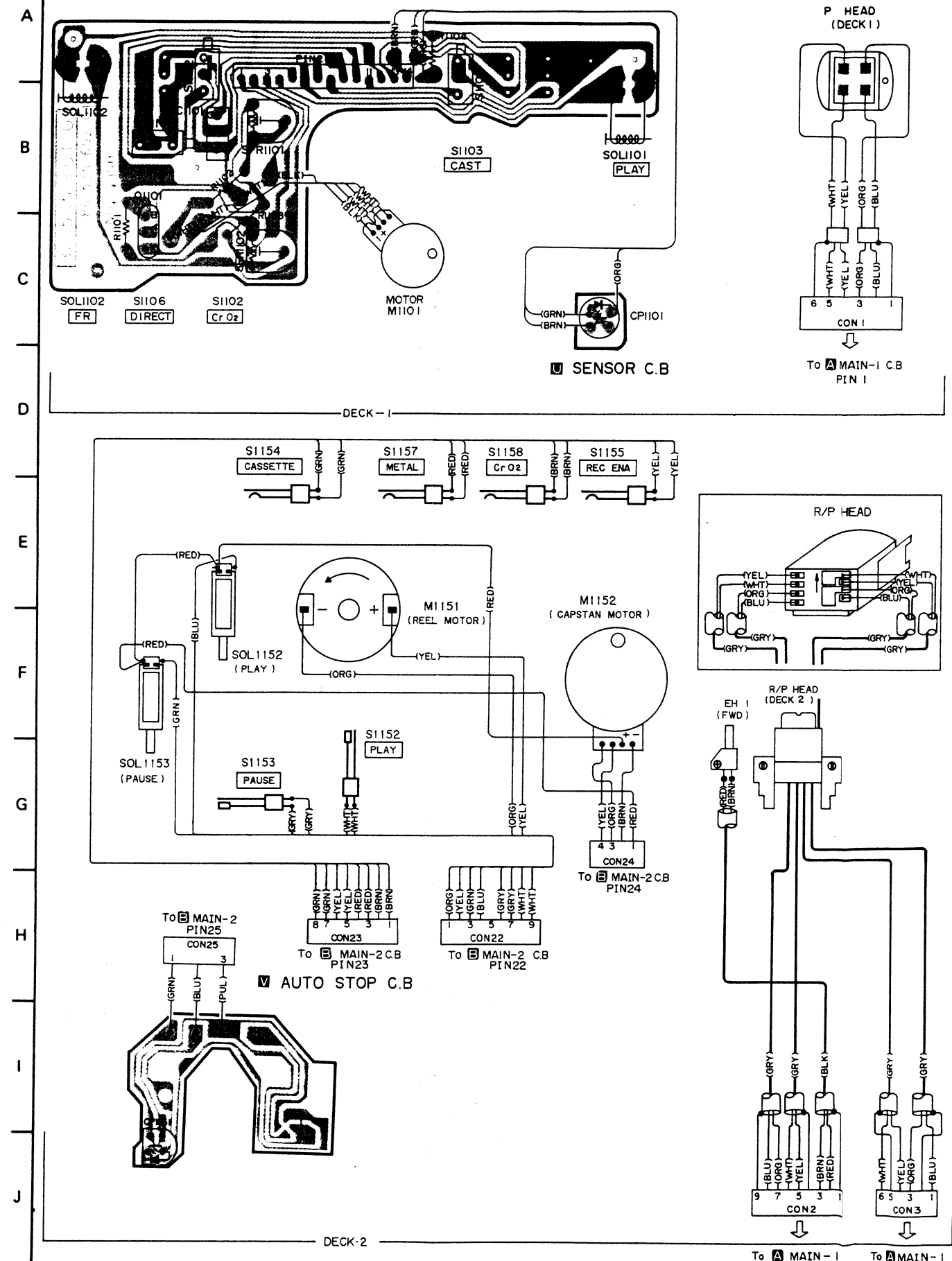
Erasing ratio : More than 60dB (at 125 Hz)

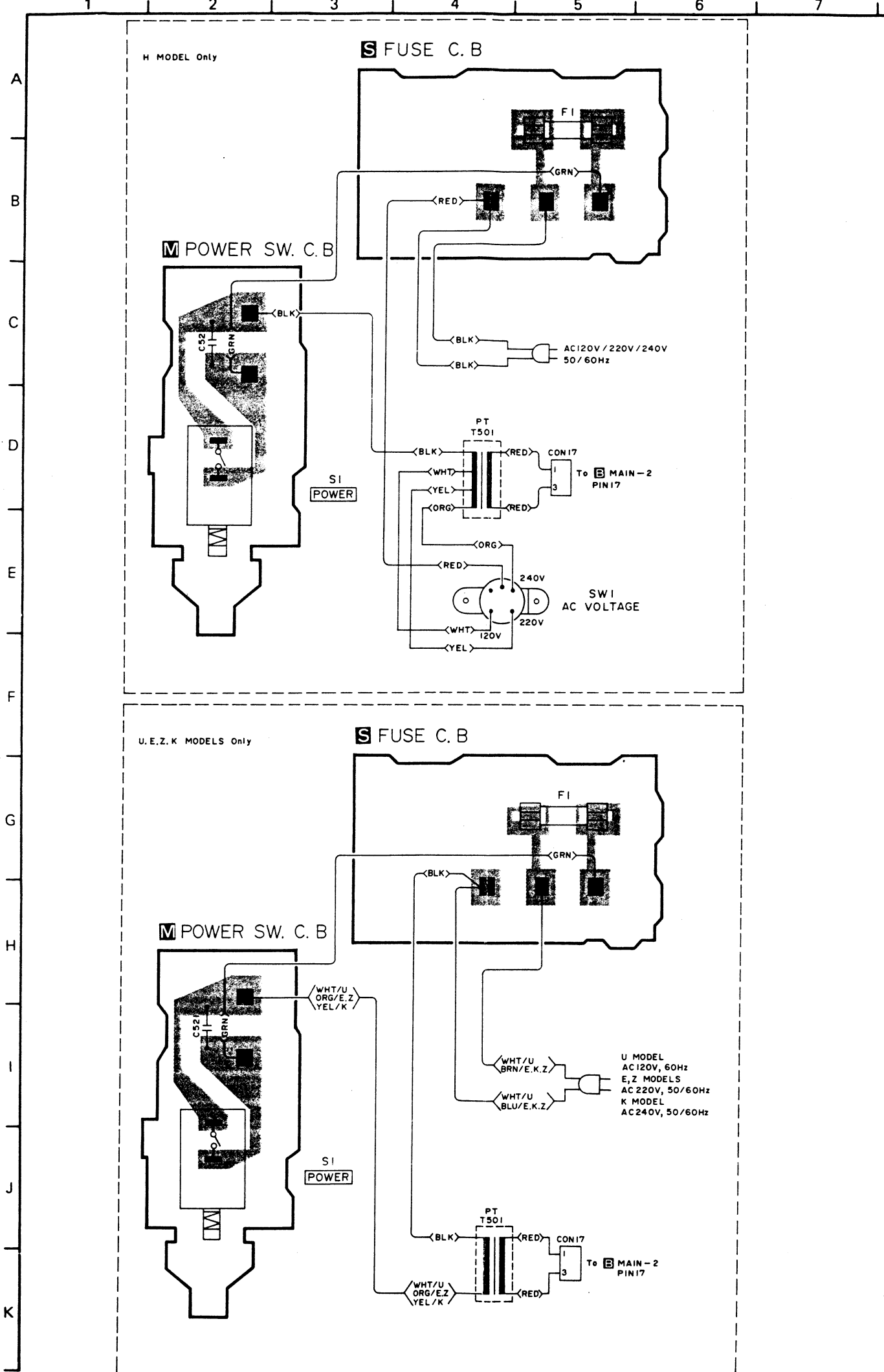
Channel separation : More than 30dB

Recording bias frequency : 100 kHz

Test tape : METAL TTA-119MP  
CrO<sub>2</sub> TTA-119H  
NORMAL TTA-119K

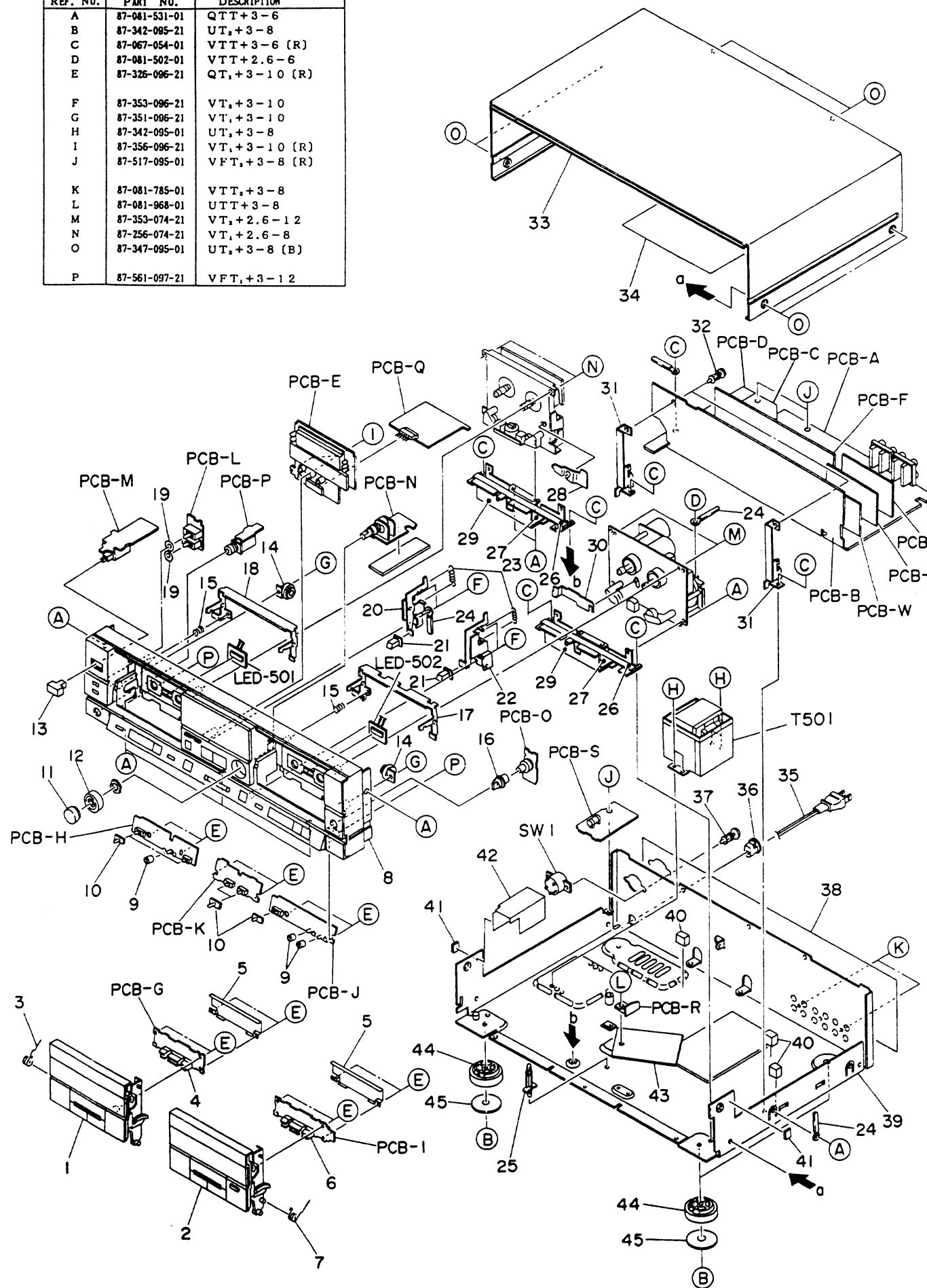
**T** DECK C.B





EXPLODED VIEW-1

| REF. NO. | PART NO.      | DESCRIPTION               |
|----------|---------------|---------------------------|
| A        | 87-081-531-01 | QTT+3-6                   |
| B        | 87-342-095-21 | UT <sub>1</sub> +3-8      |
| C        | 87-067-054-01 | VTT+3-6 (R)               |
| D        | 87-081-502-01 | VTT+2.6-6                 |
| E        | 87-325-096-21 | QT <sub>1</sub> +3-10 (R) |
| F        | 87-353-096-21 | VT <sub>1</sub> +3-10     |
| G        | 87-351-096-21 | VT <sub>1</sub> +3-10     |
| H        | 87-342-095-01 | UT <sub>1</sub> +3-8      |
| I        | 87-356-096-21 | VT <sub>1</sub> +3-10 (R) |
| J        | 87-517-095-01 | VFT <sub>1</sub> +3-8 (R) |
| K        | 87-081-785-01 | VTT <sub>1</sub> +3-8     |
| L        | 87-081-968-01 | UTT+3-8                   |
| M        | 87-353-074-21 | VT <sub>1</sub> +2.6-12   |
| N        | 87-256-074-21 | VT <sub>1</sub> +2.6-8    |
| O        | 87-347-095-01 | UT <sub>1</sub> +3-8 (B)  |
| P        | 87-561-097-21 | VFT <sub>1</sub> +3-12    |



# MECHANICAL PARTS LIST

※ Please order the all parts for  
this model to Japan.

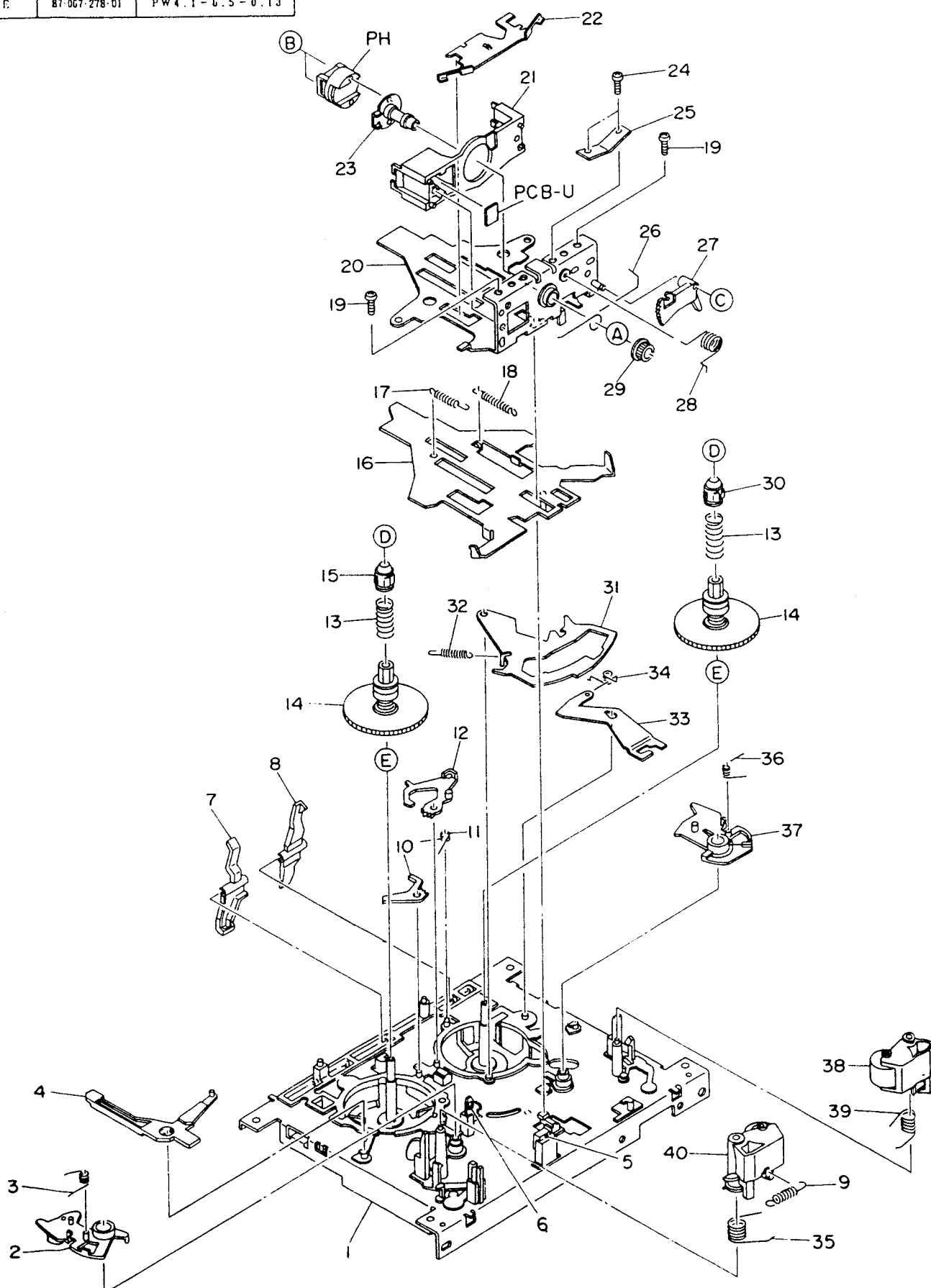
| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.    | DESCRIPTION               | COMMON<br>MODEL | Q,<br>TY |
|------------------------|-------------|-------------|---------------------------|-----------------|----------|
|                        | 1-1         | 09-047-264  | CASSETTE BOX 1 ASSY       | *               | 1        |
|                        | 1-2         | 09-047-265  | CASSETTE BOX 2 ASSY       | *               | 1        |
|                        | 1-3         | *82-217-209 | T-SPRING,EJECT 1          | *               | 1        |
|                        | 1-4         | ---         | LAMP HOUSE 1              |                 | 1        |
|                        | 1-5         | ---         | PLATE,BOX REAR            |                 | 1        |
|                        | 1-6         | ---         | LAMP HOUSE 2              |                 | 1        |
|                        | 1-7         | *82-217-210 | T-SPRING, EJECT 2         | *               | 1        |
|                        | 1-8         | *09-047-263 | FRONT CABINET ASSY        | *               | 1        |
|                        | 1-9         | ---         | RUBBER TUBE 5-3-7         |                 | 3        |
|                        | 1-10        | *82-217-013 | KNOB,SLIDE                | *               | 5        |
|                        | 1-11        | 82-217-015  | KNOB,VOLUME L             | *               | 1        |
|                        | 1-12        | 82-217-016  | KNOB,VOLUME R             | *               | 1        |
|                        | 1-13        | *84-721-023 | PUSH-BUTTON,POWER         | XC-001          | 1        |
|                        | 1-14        | *87-063-143 | OIL-DAMP 75               |                 | 2        |
|                        | 1-15        | *82-217-211 | C-SPRING,EJECT LEVER      | *               | 2        |
|                        | 1-16        | *84-424-008 | KNOB,VOLUME               |                 | 1        |
|                        | 1-17        | *82-217-204 | PLATE,EJECT 2             | *               | 1        |
|                        | 1-18        | *82-217-203 | PLATE,EJECT 1             | *               | 1        |
|                        | 1-19        | ---         | BLIND HIMERON             |                 | 2        |
|                        | 1-20        | *82-217-237 | HOLDER EJECT 1 ASSY       | *               | 1        |
|                        | 1-21        | *82-217-014 | KNOB,EJECT                | *               | 2        |
|                        | 1-22        | *82-217-238 | HOLDER EJECT 2 ASSY       | *               | 1        |
|                        | 1-23        | *81-747-327 | E-SPRING,PANEL            |                 | 2        |
|                        | 1-24        | ---         | WIRE BINDER               |                 | 3        |
|                        | 1-25        | *82-217-244 | HOLDER,CIRCUIT BOARD      | *               | 1        |
|                        | 1-26        | ---         | DAMPER,MECHANISM 2        |                 | 2        |
|                        | 1-27        | ---         | DAMPER,MECHANISM 1        |                 | 2        |
|                        | 1-28        | *82-217-213 | LEVER,EJECT BLOCKING 1    | *               | 1        |
|                        | 1-29        | *82-217-215 | HOLDER,MECHANISM          | *               | 2        |
|                        | 1-30        | *82-217-214 | LEVER,EJECT BLOCKING 2    | *               | 1        |
|                        | 1-31        | ---         | HOLDER,CIRCUIT BOARD      |                 | 2        |
|                        | 1-32        | *87-085-102 | NYLON RIVET 3.5-5.5       | *               | 2        |
|                        | 1-33        | *82-217-041 | CABINET,STEEL             |                 | 1        |
|                        | 1-34        | ---         | DAMPER 150-100            |                 | 1        |
|                        | 1-35        | *87-034-732 | AC CORD ASSY(H ONLY)      |                 | 1        |
|                        | 1-35        | *87-034-731 | AC CORD ASSY(U ONLY)      |                 | 1        |
|                        | 1-35        | *87-034-736 | AC CORD ASSY(E,Z ONLY)    |                 | 1        |
|                        | 1-35        | *87-034-734 | AC CORD ASSY(K ONLY)      |                 | 1        |
|                        | 1-36        | *87-085-184 | CORD BUSHING(H ONLY)      |                 | 1        |
|                        | 1-36        | *87-085-189 | CORD BUSHING(U ONLY)      |                 | 1        |
|                        | 1-36        | *87-085-185 | CORD BUSHING(E,K,Z ONLY)  |                 | 1        |
|                        | 1-37        | *87-085-090 | NYLON RIVET 3-6.5(H ONLY) |                 | 2        |
|                        | 1-38        | ---         | PLATE,JACK                |                 | 1        |
|                        | 1-39        | ---         | AMP.CHASSIS ASSY          |                 | 1        |
|                        | 1-40        | ---         | CUSHION 12-15-12.5        |                 | 3        |
|                        | 1-41        | ---         | G CUSHION 4X9.5X13.5      |                 | 2        |
|                        | 1-42        | ---         | COVER,POWER               |                 | 1        |
|                        | 1-43        | ---         | HEAT SINK                 |                 | 1        |
|                        | 1-44        | *81-715-051 | FOOT(40)                  |                 | 4        |
|                        | 1-45        | *82-217-096 | FELT 33.5                 |                 | 4        |

## ■ACCESSORIES/PACKAGE LIST

| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.    | DESCRIPTION           | COMMON<br>MODEL | Q,<br>TY |
|------------------------|-------------|-------------|-----------------------|-----------------|----------|
|                        | 1           | *82-217-901 | INSTRUCTION BOOKLET   | *               | 1        |
|                        | 2           | *87-032-845 | SIEMENS PLUG (H ONLY) |                 | 1        |
|                        | 3           | *87-034-978 | CW-254 BSK            |                 | 3        |

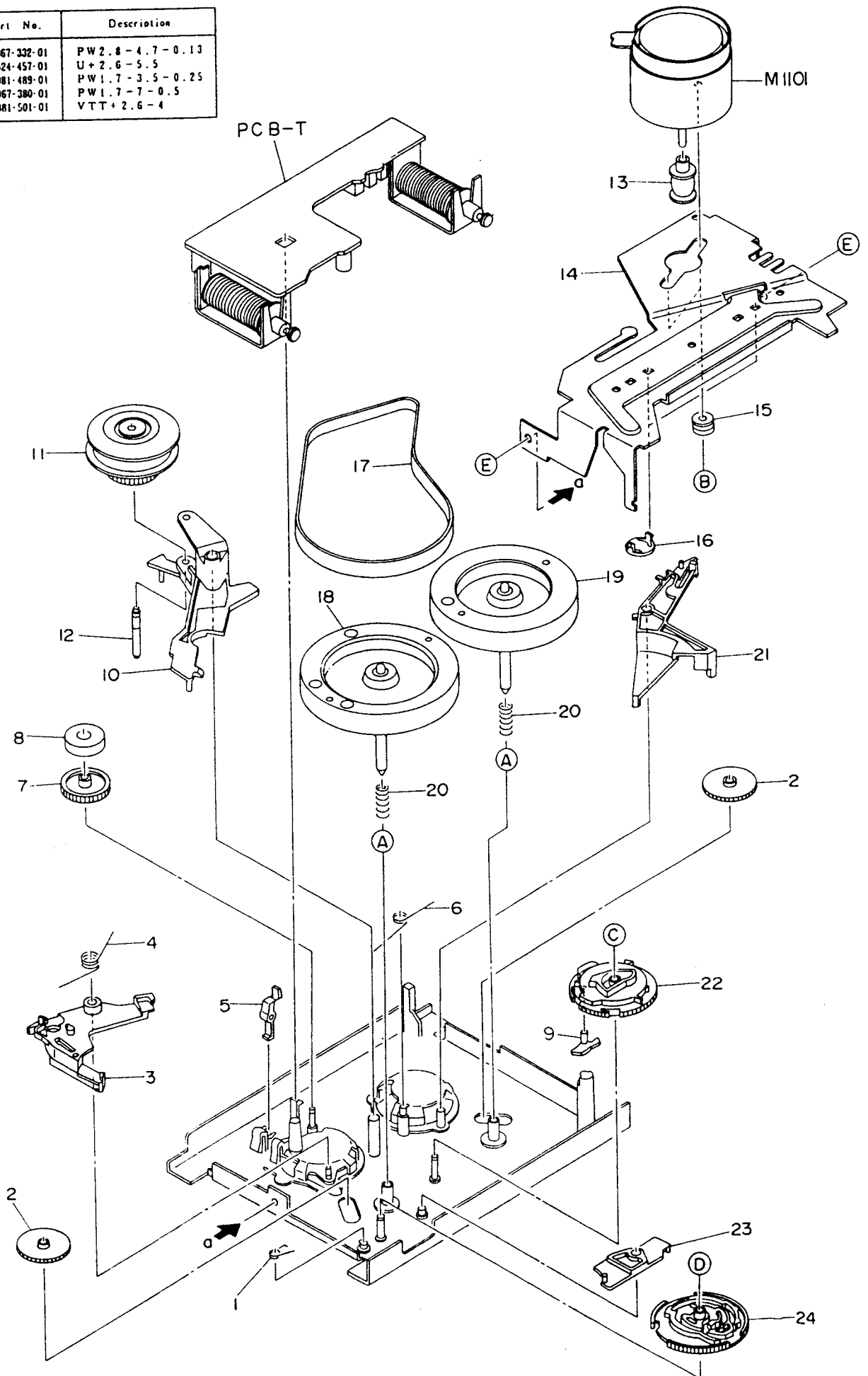
EXPLODED VIEW-2 (DECK 1)

| Ref. No. | Part No.      | Description     |
|----------|---------------|-----------------|
| A        | 87-067-364-01 | PW 3.58-6-0.25C |
| B        | 87-067-177-01 | V+1.6-5.5       |
| C        | 87-081-489-01 | PW 1.7-3.5-0.25 |
| D        | 86-524-418-01 | VFT, +1.4-5     |
| E        | 87-067-278-01 | PW 4.1-6.5-0.13 |



# EXPLODED VIEW-3 (DECK 1)

| Ref. No. | Part No.      | Description         |
|----------|---------------|---------------------|
| A        | 87-067-332-01 | PW 2.8 - 4.7 - 0.13 |
| B        | 86-524-457-01 | U + 2.6 - 5.5       |
| C        | 87-081-489-01 | PW 1.7 - 3.5 - 0.25 |
| D        | 87-067-380-01 | PW 1.7 - 7 - 0.5    |
| E        | 87-081-501-01 | VTT + 2.6 - 4       |



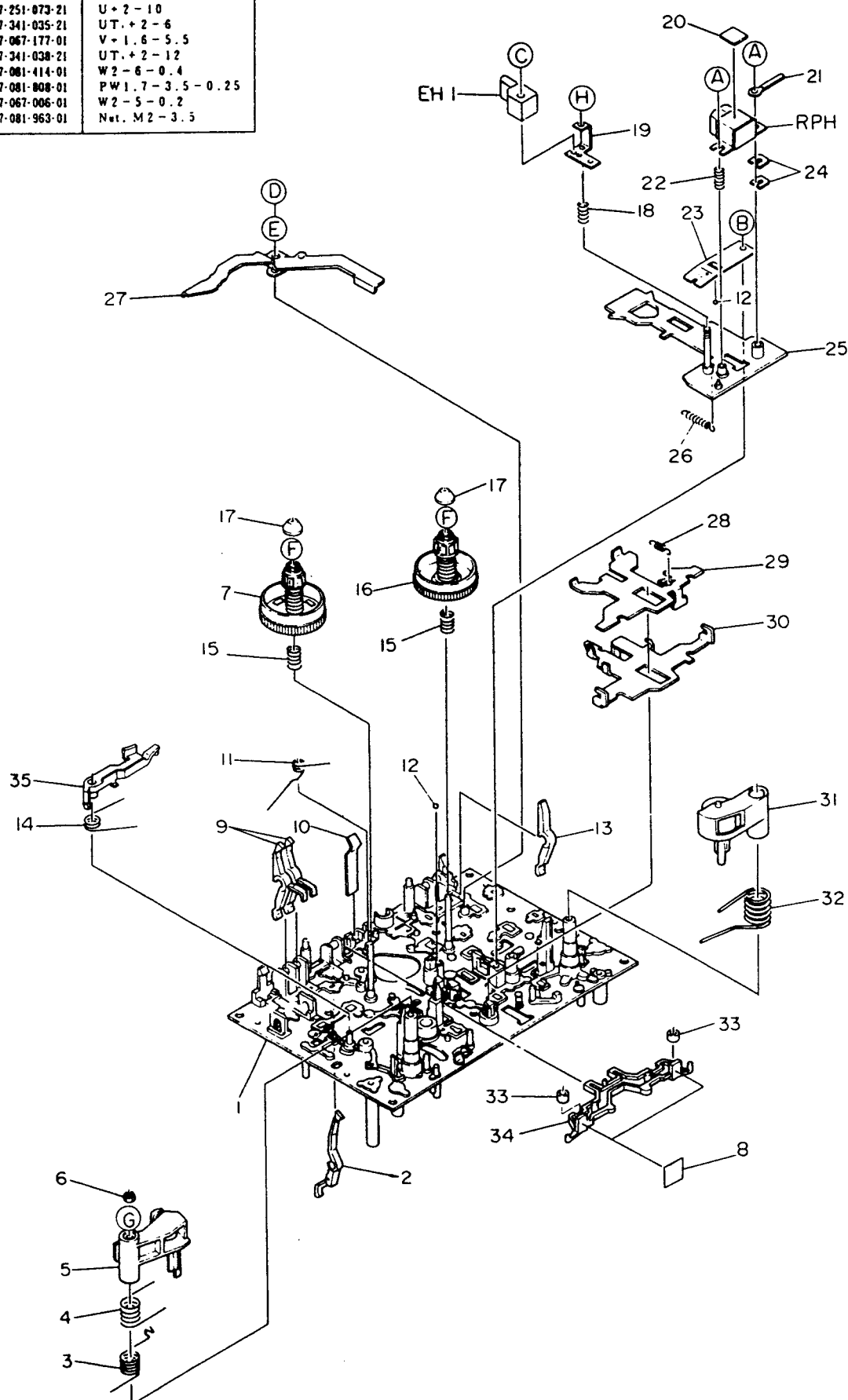
※ Please order the all parts for  
this model to Japan.

| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.    | DESCRIPTION              | COMMON<br>MODEL | Q.<br>TY |
|------------------------|-------------|-------------|--------------------------|-----------------|----------|
|                        | 2-1         | ★86-535-201 | OUTSERT CHASSIS ASSY     |                 | 1        |
|                        | 2-2         | ★86-535-239 | LEVER,PLAY R             |                 | 1        |
|                        | 2-3         | ★86-535-283 | T-SPRING,PLAY GEAR R     |                 | 1        |
|                        | 2-4         | ★86-535-242 | LEVER,EJECT BLOCKING L   |                 | 1        |
|                        | 2-5         | ★86-535-296 | FELT 5-5-2               |                 | 1        |
|                        | 2-6         | ★86-517-353 | SHEET                    |                 | 1        |
|                        | 2-7         | ★86-535-249 | LEVER,CASSETTE DETECTION |                 | 1        |
|                        | 2-8         | ★86-535-254 | LEVER,CHROME             |                 | 1        |
|                        | 2-9         | ★86-535-287 | E-SPRING,PINCH           |                 | 1        |
|                        | 2-10        | ★86-535-252 | LEVER,BRAKE R            |                 | 1        |
|                        | 2-11        | ★86-535-276 | T-SPRING,BRAKE           |                 | 1        |
|                        | 2-12        | ★86-535-251 | LEVER,BRAKE F            |                 | 1        |
|                        | 2-13        | ★86-535-293 | C-SPRING,REEL PLATFORM   |                 | 2        |
|                        | 2-14        | 86-535-240  | REEL PLATFORM R ASSY     |                 | 1        |
|                        | 2-15        | ★86-524-218 | STOPPER,REEL PLATFORM S  |                 | 1        |
|                        | 2-16        | ★86-535-215 | SLIDE PLATE ASSY         |                 | 1        |
|                        | 2-17        | ★86-535-285 | E-SPRING,SLIDE           |                 | 1        |
|                        | 2-18        | ★86-535-286 | E-SPRING,ACTUATING       |                 | 1        |
|                        | 2-19        | ★86-535-310 | ADJUSTMENT SCREW         |                 | 2        |
|                        | 2-20        | ★86-535-351 | ACTUATING CHASSIS ASSY   |                 | 1        |
|                        | 2-21        | ★86-535-237 | GUIDE,TAPE               |                 | 1        |
|                        | 2-22        | ★86-535-289 | P-SPRING,ACTUATING       |                 | 1        |
|                        | 2-23        | ★86-535-270 | HEAD HOUSING ASSY        |                 | 1        |
|                        | 2-24        | ★86-535-297 | ADJUSTMENT SCREW,AZIMUTH |                 | 2        |
|                        | 2-25        | ★86-524-300 | P-SPRING,AZIMUTH         |                 | 1        |
|                        | 2-26        | ★86-535-298 | T-SPRING,GUIDE           |                 | 1        |
|                        | 2-27        | 86-535-246  | GEAR,SEGMENT             |                 | 1        |
|                        | 2-28        | ★86-535-290 | T-SPRING,GEAR SEGMENT    |                 | 1        |
|                        | 2-29        | 86-524-278  | GEAR,HEAD HOUSING        |                 | 1        |
|                        | 2-30        | ★86-524-233 | STOPPER,REEL PLATFORM T  |                 | 1        |
|                        | 2-31        | ★86-535-218 | LEVER,DIRECTION ASSY     |                 | 1        |
|                        | 2-32        | ★86-535-284 | E-SPRING,LEVER DELECTION |                 | 1        |
|                        | 2-33        | ★86-535-225 | LEVER,D SWITCH           |                 | 1        |
|                        | 2-34        | ★86-535-277 | T-SPRING,D SWITCH        |                 | 1        |
|                        | 2-35        | ★86-535-281 | T-SPRING,PINCH R         |                 | 1        |
|                        | 2-36        | ★86-535-282 | T-SPRING,PLAY GEAR F     |                 | 1        |
|                        | 2-37        | ★86-535-238 | LEVER,PLAY F             |                 | 1        |
|                        | 2-38        | 86-535-226  | PINCH LEVER F ASSY       |                 | 1        |
|                        | 2-39        | ★86-535-280 | T-SPRING,PINCH F         |                 | 1        |
|                        | 2-40        | 86-535-228  | PINCH LEVER R ASSY       |                 | 1        |

| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.    | DESCRIPTION        | COMMON<br>MODEL | Q.<br>TY |
|------------------------|-------------|-------------|--------------------|-----------------|----------|
|                        | 3-1         | ★86-535-291 | T-SPRING,FR CAM    |                 | 1        |
|                        | 3-2         | 86-535-259  | GEAR,PLAY          |                 | 2        |
|                        | 3-3         | ★86-535-230 | LEVER,TRIGGER FR   |                 | 1        |
|                        | 3-4         | ★86-535-278 | T-SPRING,FR        |                 | 1        |
|                        | 3-5         | ★86-535-253 | LEVER,RELAY        |                 | 1        |
|                        | 3-6         | ★86-535-279 | T-SPRING,MAIN      |                 | 1        |
|                        | 3-7         | 86-535-258  | GEAR,IDLER         |                 | 1        |
|                        | 3-8         | ★86-535-614 | RING,MAGNET(4P)    |                 | 1        |
|                        | 3-9         | ★86-535-308 | LEVER,SELECT       |                 | 1        |
|                        | 3-10        | ★86-535-233 | LEVER,FR           |                 | 1        |
|                        | 3-11        | ★86-535-301 | SLIPDISC ASSY      |                 | 1        |
|                        | 3-12        | ★86-535-235 | SHAFT,FR           |                 | 1        |
|                        | 3-13        | ★86-535-315 | MOTOR PULLEY       |                 | 1        |
|                        | 3-14        | ---         | HOLDER,MOTOR       |                 | 1        |
|                        | 3-15        | ★86-513-441 | COLLAR             |                 | 2        |
|                        | 3-16        | ★86-535-255 | FLYWHEEL BEARING   |                 | 2        |
|                        | 3-17        | 86-535-294  | BELT               |                 | 1        |
|                        | 3-18        | 86-535-264  | FLYWHEEL F ASSY    |                 | 1        |
|                        | 3-19        | 86-535-267  | FLYWHEEL R ASSY    |                 | 1        |
|                        | 3-20        | ★86-535-288 | C-SPRING,FW        |                 | 2        |
|                        | 3-21        | ★86-535-231 | LEVER,TRIGGER PLAY |                 | 1        |
|                        | 3-22        | ★86-535-260 | CAM,MAIN           |                 | 1        |
|                        | 3-23        | ★86-535-223 | LEVER,PAUSE        |                 | 1        |
|                        | 3-24        | ★86-535-261 | CAM,FR P           |                 | 1        |
|                        | 3-25        | ★86-535-308 | LEVER,SELECT       |                 | 1        |

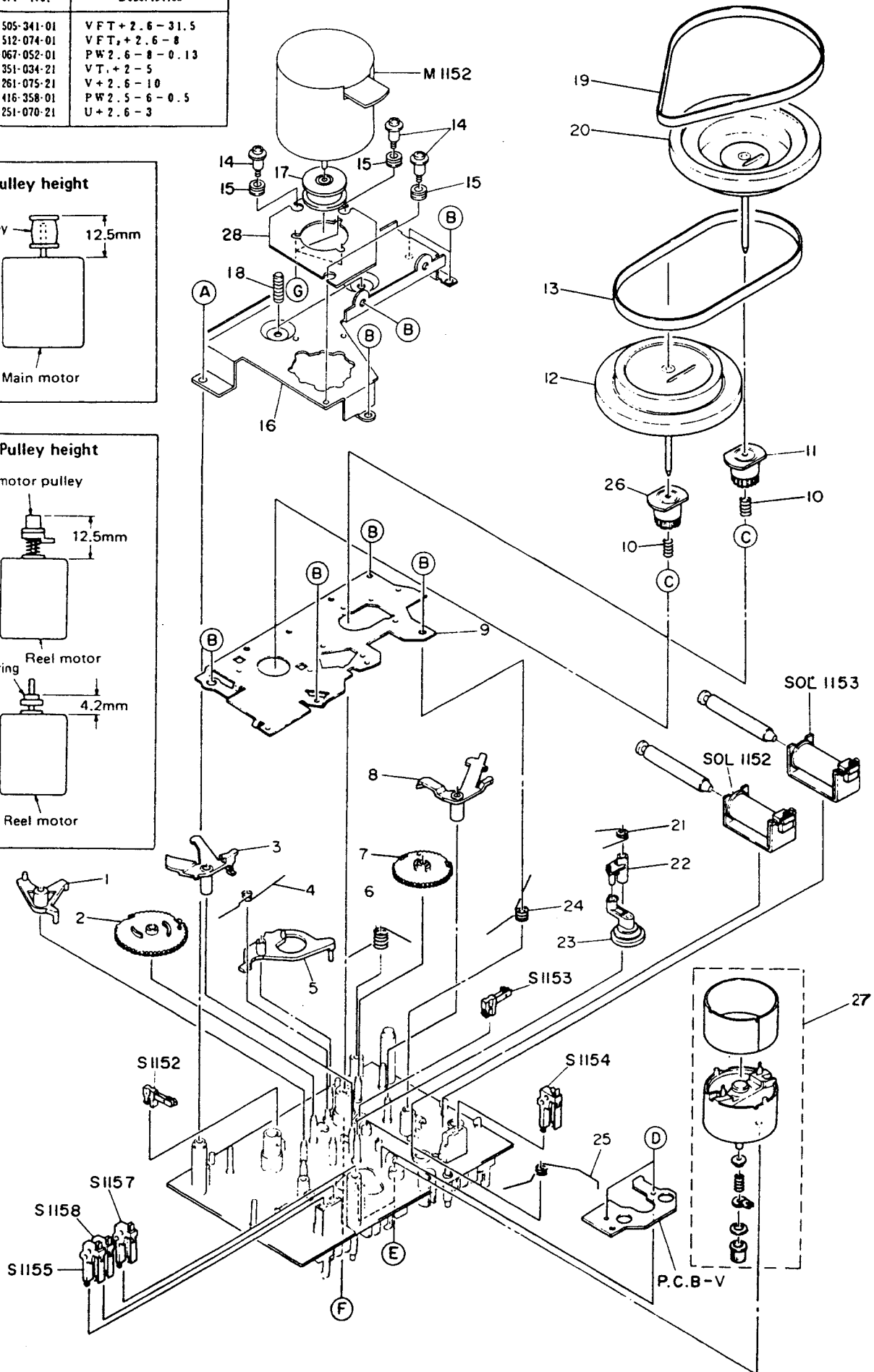
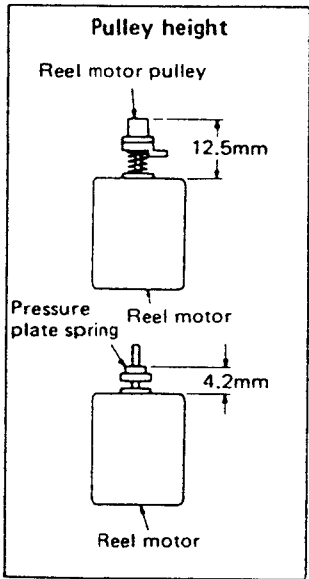
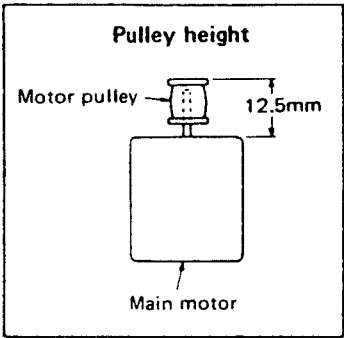
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| Ref. No. | Part No.      | Description        |
|----------|---------------|--------------------|
| A        | 87-251-073-21 | U + 2 - 10         |
| B        | 87-341-035-21 | UT. + 2 - 6        |
| C        | 87-067-177-01 | V - 1.6 - 5.5      |
| D        | 87-341-038-21 | UT. + 2 - 12       |
| E        | 87-081-414-01 | W2 - 6 - 0.4       |
| F        | 87-081-808-01 | PW1.7 - 3.5 - 0.25 |
| G        | 87-067-066-01 | W2 - 5 - 0.2       |
| H        | 87-081-963-01 | Net. M2 - 3.5      |



# EXPLODED VIEW-5 (DECK 2)

| Ref. No. | Part No.      | Description  |
|----------|---------------|--------------|
| A        | 81-505-341-01 | VFT+2.6-31.5 |
| B        | 87-512-074-01 | VFT,+2.6-8   |
| C        | 87-067-052-01 | PW2.6-8-0.13 |
| D        | 87-351-034-21 | VT,+2-5      |
| E        | 87-261-075-21 | V+2.6-10     |
| F        | 82-416-358-01 | PW2.5-6-0.5  |
| G        | 87-251-070-21 | U+2.6-3      |



※ Please order the all parts for  
this model to Japan.

| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.    | DESCRIPTION                | COMMON<br>MODEL | Q,<br>TY |
|------------------------|-------------|-------------|----------------------------|-----------------|----------|
|                        | 4-1         | *81-507-260 | OUTSERT CHASSIS ASSY(4L-1) |                 | 1        |
|                        | 4-2         | *81-505-242 | LEVER,METAL                |                 | 1        |
|                        | 4-3         | *81-507-228 | C-SPRING,PINCH LEVER S     |                 | 1        |
|                        | 4-4         | *81-507-217 | T-SPRING,PINCH LEVER S     |                 | 1        |
|                        | 4-5         | 81-507-207  | PINCH LEVER S ASSY         |                 | 1        |
|                        | 4-6         | *87-081-963 | NYLON NUT M2-3.5           |                 | 1        |
|                        | 4-7         | 81-505-275  | REEL PLATFORM S ASSY       |                 | 1        |
|                        | 4-8         | *81-505-237 | FELT,SLIDE BRAKE           |                 | 2        |
|                        | 4-9         | *81-505-241 | REC BLOCKING LEVER         |                 | 2        |
|                        | 4-10        | *86-516-289 | P-SPRING,CASSETTE PRESSURE |                 | 1        |
|                        | 4-11        | *81-505-268 | T-SPRING,SLIDE BRAKE       |                 | 1        |
|                        | 4-12        | *87-073-005 | STEEL BALL 2               |                 | 2        |
|                        | 4-13        | *81-505-240 | SENSOR LEVER,CASSETTE      |                 | 1        |
|                        | 4-14        | *81-507-223 | T-SPRING,B.T               |                 | 1        |
|                        | 4-15        | *81-507-219 | C-SPRING,REEL S            |                 | 2        |
|                        | 4-16        | 81-505-369  | REEL PLATFORM T ASSY-2     |                 | 1        |
|                        | 4-17        | *82-303-398 | CAP,TAKE-UP REEL           |                 | 2        |
|                        | 4-18        | *81-507-251 | C-SPRING,EH B              |                 | 1        |
|                        | 4-19        | *81-507-250 | HOLDER C,EH                |                 | 1        |
|                        | 4-20        | ---         | LABEL,HEAD                 |                 | 1        |
|                        | 4-21        | ---         | WIRE BINDER 2.3            |                 | 1        |
|                        | 4-22        | *82-307-212 | C-SPRING,EH                |                 | 1        |
|                        | 4-23        | *81-507-224 | P-SPRING,ACTUATING CHASSIS |                 | 1        |
|                        | 4-24        | *81-507-227 | SPACER                     |                 | 2        |
|                        | 4-25        | *81-507-252 | ACTUATING CHASSIS ASSY B   |                 | 1        |
|                        | 4-26        | *81-505-265 | E-SPRING,ACTUATING CHASSIS |                 | 1        |
|                        | 4-27        | *81-505-307 | LEVER,EJECT BRAKE          |                 | 1        |
|                        | 4-28        | *81-505-266 | E-SPRING,PAUSE PLATE       |                 | 1        |
|                        | 4-29        | *81-505-207 | PLATE,PAUSE                |                 | 1        |
|                        | 4-30        | *81-507-220 | PLATE,PINCH LEVER          |                 | 1        |
|                        | 4-31        | 81-505-210  | PINCH LEVER F ASSY         |                 | 1        |
|                        | 4-32        | *81-505-267 | T-SPRING,PINCH F           |                 | 1        |
|                        | 4-33        | *81-507-229 | G.BRAKE                    |                 | 2        |
|                        | 4-34        | *81-505-236 | LEVER,SLIDE BRAKE          |                 | 1        |
|                        | 4-35        | *81-507-222 | LEVER,BACKTENSION          |                 | 1        |

| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.    | DESCRIPTION            | COMMON<br>MODEL | Q,<br>TY |
|------------------------|-------------|-------------|------------------------|-----------------|----------|
|                        | 5-1         | *81-505-230 | LEVER,PLAY             |                 | 1        |
|                        | 5-2         | 81-505-234  | GEAR,PLAY CAM          |                 | 1        |
|                        | 5-3         | *81-505-231 | TRIGGER LEVER,PLAY     |                 | 1        |
|                        | 5-4         | *81-505-272 | T-SPRING,CAM           |                 | 1        |
|                        | 5-5         | *81-505-308 | LEVER B,PAUSE          |                 | 1        |
|                        | 5-6         | *81-505-283 | T-SPRING,PAUSE LEVER   |                 | 1        |
|                        | 5-7         | 81-505-235  | GEAR,PAUSE CAM         |                 | 1        |
|                        | 5-8         | *81-505-233 | TRIGGER LEVER,PAUSE    |                 | 1        |
|                        | 5-9         | ---         | MECHANISM CHASSIS B    |                 | 1        |
|                        | 5-10        | *81-505-261 | C-SPRING,FLYWHEEL F    |                 | 2        |
|                        | 5-11        | 81-505-225  | GEAR,FLYWHEEL          |                 | 1        |
|                        | 5-12        | *81-507-244 | FLYWHEEL S ASSY FD     |                 | 1        |
|                        | 5-13        | 81-507-247  | RUBBER BELT B          |                 | 1        |
|                        | 5-14        | *87-081-483 | MOTOR SCREW,M2.6       |                 | 3        |
|                        | 5-15        | *87-087-029 | RUBBER CUSHION         |                 | 3        |
|                        | 5-16        | ---         | HOLDER,MOTOR(4L-1)     |                 | 1        |
|                        | 5-17        | *81-507-262 | PULLEY,MOTOR           |                 | 1        |
|                        | 5-18        | *82-565-373 | SCREW,THRUST           |                 | 2        |
|                        | 5-19        | 81-507-261  | RUBBER BELT(4L-1)      |                 | 1        |
|                        | 5-20        | *81-507-242 | FLYWHEEL T ASSY FD     |                 | 1        |
|                        | 5-21        | *81-505-361 | T-SPRING,FR IDLER B    |                 | 1        |
|                        | 5-22        | *81-505-359 | IDLER LEVER FR C       |                 | 1        |
|                        | 5-23        | 81-505-356  | FR IDLER B ASSY        |                 | 1        |
|                        | 5-24        | *81-505-271 | T-SPRING,TRIGGER LEVER |                 | 1        |
|                        | 5-25        | *81-505-269 | T-SPRING,PINCH PLATE   |                 | 1        |
|                        | 5-26        | 81-505-354  | GEAR,FLYWHEEL 2.7      |                 | 1        |
|                        | 5-27        | 09-011-038  | REEL MOTOR ASSY        |                 | 1        |
|                        | 5-28        | ---         | PLATE,MOTOR            |                 | 1        |